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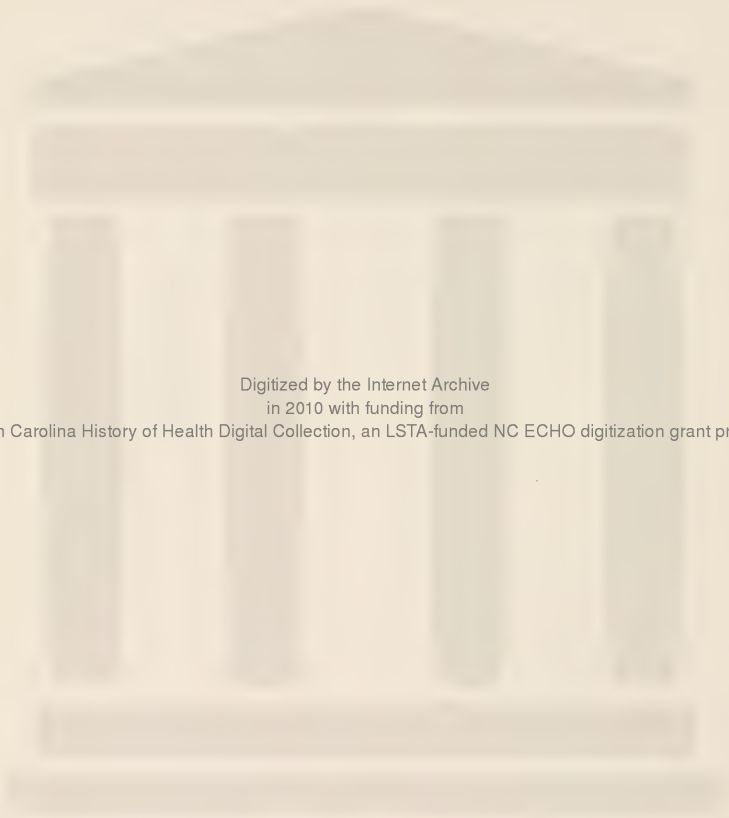
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# THE JOURNAL OF SOUTHERN MEDICINE AND SURGERY

306 NORTH TRYON STREET, CHARLOTTE, N. C.

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JAMES M. NORTINGTON, M.D., Editor

VOL. CXII

JANUARY, 1950

No. 1

## Use of Electric Shock in the Treatment of Neuroses

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WITH the founding of the American Board of Psychiatry and Neurology a decade and a half ago, psychiatry, which prior to that date had been an art, came into its own as a science, and received the official stamp of a specialty in the field of medicine. Today after so short a history as a science, psychiatry finds itself in a critical formative stage, its numerous beneficial therapies, conflicting theories, and wealth of misunderstood nomenclature having given rise to its present dilemma. An astounding lack of harmony has resulted because of divergent opinions among psychiatrists as they seek for valid approaches to the problems pertaining to the psyche; but, the mere fact that highly-trained specialists, representing different schools of thought, are at work upon so highly-differentiated an organ as the human psyche, indicates a crying need for stimulating research involving the application of numerous therapies, each of which should be adequately tested and impartially evaluated. If, as psychiatry becomes of age she is ever to be accorded her place as she strives to perform her humanitarian duties, it is necessary that she fortify herself so strongly that she will be able to throw off the stigma of being "a medical specialty of high-sounding terms

and platitudes and in which no two psychiatrists agree about anything."

Tennyson said, "The old order changeth, yielding place to the new; and God reveals himself in many ways, lest one good custom should corrupt the world." Yes, at the present time, we are faced with a reversal of many attitudes, beliefs and theories to which the race clung for centuries. During the past half-century substantial progress has been made as new theories were advanced; whereas during the past 16 years, since the advent of shock therapies, much of our thinking has been revolutionized, to great practical advantage.

Many eminent names have been associated with the effort to alleviate mental illness through various media for producing shock or fear; such as bloodletting, ducking, occipital branding, cannon-firing and many others. Today, convulsion therapy induced through shock holds the center of the stage as the most effective single remedy in the whole range of psychiatric treatment.

Since the late thirties, when the eminent Italian scientist Cerletti and his colleague Bini inaugurated electroshock treatment of human beings, research into this treatment has changed attitudes and even laws, and has brought about more profound, but still inadequate research. Since certain therapies are followed by favorable results in some cases, while in other similar cases, no such favor-

Read before the Southern Psychiatric Association in the Annual Meeting held at New Orleans, November 27th, 1949.

able results ensue, more intensive research is demanded.

Through research many a cherished theory has been exploded. It has shown it to be unnecessary to isolate a child with pertussis for more than two weeks after the whoop starts; or to isolate a victim of infantile paralysis except during the fever-period, which usually lasts a week. Seven years ago scientists announced the inefficacy of penicillin in the treatment of bacterial endocarditis, only, two years later, to find it the most effective remedy ever known for combatting this great scourge.

The primary purpose of this paper is to set forth some findings of a clinical study made by the writer which caused him to revise his beliefs as to the treatment of neuroses and psychoneuroses through the use of electroshock. The writer hopes not to appear presumptuous in saying that, in spite of the fact that ECT has been branded a failure in the treatment of the neuroses, his findings in a purely clinical study, not scientifically controlled, have led him to believe to the contrary.

Many, not familiar with electroshock therapy have overemphasized its hazards, and, competent therapists have not always been given a free hand. Though it is frequently said that shock treatment is not effectual in the treatment of neuroses, some value it in the reactive and anxiety depressions and in the most severe hysterias. Just as not all types of schizophrenia respond equally well to shock therapy, so not all types of the neuroses respond equally to ECT. The writer contends that the core phenomenon of the generalized psychoneuroses is a persistent, non-adjustive emotional reaction to baffling personal difficulties; and he recognizes the fact that, in any syndrome in which the affective disorder either dominates or determines the clinical pattern, convulsive shock therapy proves effective. In the neuroses, therefore (and under that term are included the psychoneuroses as well) when electroshock is the major therapy selected, and when intensive treatment is administered over a sufficient period of time, the results will be both encouraging and far-reaching.

There are those who have long contended that psychoanalysis and other forms of psychotherapy are the logical treatments for the neuroses. Psychoanalysis has made great contribution to the treatment of the neurotic, by tracing the neurosis back to its origin and by offering a rational form of treatment through catharsis, desymbolization and reconstruction of the personality. But such a time-consuming therapy is both exhaustive and expensive, only the well-to-do being able to afford it. There is the additional objection that a great many of the severe cases of the neuroses are not accessible to psychoanalysis or willing to go

through with it, their emotional and intellectual qualifications being unequal to the treatment.

Likewise through hypnosis, a therapy which, though potentially beneficial, has fallen into disrepute, dangers and disadvantages are encountered. It is true that it has been widely employed especially in the treatment of neurotic amnesias and has been said to be superior to narcosisynthesis, yet its usefulness is only as an adjuvant.

Though some neurotics are not accessible to psychotherapy, electroshock makes psychotherapy possible in a number of such cases and enhances rapport. Moriarty<sup>1</sup> believes that the combination of convulsive therapy and psychotherapy yields far better results than psychotherapy alone. Titeca considers psychotherapy second to ECT in the treatment of most cases of hysteria. Although death from ECT is exceedingly rare, convulsive treatment is a major procedure and not one to be used lightly. Hence the writer believes that in ECT psychiatry has come into possession of a valuable tool for altering the symptoms of the mentally ill found in many classifications including the neuroses. But, as "The play's the thing," so in ECT, the technique is likewise the thing, this technique being intensive treatment as it is applied in the treatment of all types of the psychoneuroses. An excellent classification of the neuroses is that made by Fetterman in a new release from the press. He says each patient manifests symptoms which differ more from one person to another than do fingerprints. He, therefore, divides the psychoneuroses into two major groups: (1) the situational neuroses—those which develop largely as the result of a distressing, frightening or exhausting occasion; and (2) the chronic neuroses (or constitutional)—those in whose victims the factors of endowment and early conditioning are tremendously significant.

In a recent issue of *Modern Practice in Psychological Medicine* reference is made to the success of the electroshock treatment. Kalinowsky, in the 1944 *Bulletin of the New York Academy of Medicine*, gives as one of the main reasons for discordance in reports on shock therapy the difference in material, and states that "an equally important reason for lack of agreement can be found in differences in intensity of treatment." For instance, he says, "A symptomatic use of ECT can be made to relieve tension states with only two or three treatments in order to make patients more accessible to psychotherapy." Bennet says, "All authors now agree upon the advantages of the electrically-induced convulsions." Milligan explains how at St. James Hospital, Portsmouth, England, 100 psychoneurotics had been treated by the intensive method, in some cases as many as four treatments being administered in one day, the dosage being modified

as the response was made to treatment. Because of the confusion, amnesia and disorientation brought about, the patient required very special nursing. In some cases it was necessary to reduce the patient to the infantile level—completely helpless and doubly incontinent. As the patient gradually emerged from the confusional state, he was given psychotherapy in the form of reassurance and explanation and was encouraged to participate in social activities. The psychoneuroses observed in Milligan's study included anxiety states, hysteria, obsessional states and mixed stages. Of the patients treated with ECT, 25 males and 27 females recovered; 19 males and 26 females were relieved; and one male and two females were not improved. Though the interesting results of this Plymouth study of 1946 occasioned some short-lived lambasting, it also served as a stimulus to further research.

Following a 4½-year period as psychiatrist in the Army, the writer began using ECT. This paper limits itself to 113 severe neurotics, of whom 98 were male and 15 female, practically all South Carolinians, all suffering from severe psychoneuroses. The section in which this institution is located has a population not "psychiatrically-minded," and the majority of patients arrive only after they have visited many other specialists and hospital centers, and have consented to enter a mental institution as a last resort. The majority of these cases reported were of hysterias of different types and mixed psychoneuroses, with complaints of insomnia, frequent headache, tension, gastrointestinal disturbances, anxiety, inability to concentrate, ease of fatigability, loss of weight, inability to work, numbness and tingling of limbs, loss of interest in personal appearance and apprehension. The youngest patient was a boy of 18, the oldest, a man of 66. The average age at the time of treatment was 30½ years, the average age of onset of illness, 28 years. One-fourth of the patients complained of marital discord, and 40 per cent showed suicidal potentiality. A majority reported a reduction in sex interest, and a considerable number possessed schizoid personalities. A small number had incipient schizophrenic features or asthenic traits coupled with an affective flattening.

Perhaps the majority admitted to the sanitarium are patients who cannot afford lengthy hospitalization but must return to their work. They have also been under the impression that, after receiving two or three shock treatments, they should be able to return home. Another detrimental factor is the tendency on the part of the family to take the patient home before he has been hospitalized long enough for optimum treatment. Further, many general practitioners failing to estimate correctly the

duration of mental illness, unintentionally misinform patients they refer, by assuring them that one or two electroshock treatments will be sufficient.

Because of the universal acceptance of ECT as a treatment for numerous mental illnesses; because it appreciably reduces the period of hospitalization and because it is the most logical, economical and practical therapy to be used, the writer was afforded an opportunity to observe the excellent results in many types of the neuroses treated intensively with ECT. In proper hands and supplemented with systematic subshock doses of insulin, psychotherapy and other available measures, it proves of inestimable value as a treatment for the neuroses, and in a large percentage of cases sends the patients out with a new, bright outlook on life and restores them to an acceptable place in society.

After permission for application of ECT was obtained from a member of the patient's family and the patient himself was judged a suitable subject for the convulsive therapy, he was given shock treatments by the use of the Offner Electric apparatus, the average time consumed in the passage of current sufficient to cause grand-mal convulsion being .8 seconds, the average amount of current 700 milliamperes. As a premedication to prevent undue agitation, hyoscine was administered hypodermically, and all usual precautions such as restraining belts, mouth gag, removal of dentures, applying sandbag to hyperextend the spine, administration of oxygen, and bitemporal application of electrodes were carried out by two attendants, the nurse and psychiatrist in charge. The mean number of days during which those showing the greater improvement were hospitalized was 58, the mean number of shock treatments administered to these patients 30. In the group of patients whose improvement was not so pronounced, the mean number of days of hospitalization was 43, the mean number of treatments 26. In the total group of 113 neurotics, 48 per cent showed remission and were restored to their work, homes and society. In those showing slightly less improvement, 49 per cent were reoriented and likewise able to return to their homes. While in the hospital, these patients, in addition to shock, had received regular subshock doses of insulin and both group and individual psychotherapy. They were also given occupational, hydro- and recreational therapy. Following their periods of confusion they were given an appreciation of the basic forces which had caused them to act as they had and a knowledge for purposes of readjustment on a superior personal and social level. In both these groups there was a significant positive relationship between days spent in the hospital and amount of improvement. The patients had come from various walks of life.



For several reasons, an attempt to follow up the records of these patients has not been satisfactory. Reports are incomplete but in some few cases subjects have been followed up from six months to three years.

A few brief case histories like the following will serve to show the effectiveness of the intensive technique employed on some of the members of the group of 113.

In July, 1946, a girl, 21, was admitted to the sanitarium with complaints of numbness and tingling sensations in her feet and arms. She had difficulty in coordination of her upper and lower extremities, and was unable to open and close her right hand. The coordination of her right upper extremities was more impaired than the left. The neurological findings were on a functional basis. A year prior to admission her fiancé had been killed in an airplane crash just ten days prior to their expected marriage. She became hysterical and lost all interest in the opposite sex. Two months later she suffered a ruptured ovarian cyst and her right tube and ovary were removed. About this operation she worried a great deal, fearing that she might be branded a "bad girl." Shortly after this operation, she developed numbness and tingling in her arms which gradually grew worse. She had been working at some distance and undertook an airplane trip home. She landed at the airport to learn that her mother had been killed in an automobile accident while en route to meet her daughter's plane. The tingling sensations were accentuated and shortly afterwards, she developed signs of paralysis of her upper and lower extremities. Upon admission to the hospital, she was given subconvulsive doses of insulin combined with psychotherapy, but with no results. Pentathol interviews were tried but again to no avail. Intensive ECT was instituted, and the patient made a complete recovery after 12 treatments. She was discharged in August, 1946, and has been successfully employed in a doctor's office since. Since her discharge—a period of three years—she has made an excellent adjustment and has had no return of her illness.

In desperation, in May, 1949, a mother, 29, was admitted as an emergency case to the sanitarium. She was suffering from a hysterical state and complained constantly of severe headaches and other somatic symptoms. This patient, a former nurse, now married to a physician, but still somewhat immature and spoiled, had been brought up in the over-protected environment of a comfortable home. Three years following marriage she began to complain of anxiety-tension, insomnia, headaches, gastrointestinal disturbances and painful menstruation; but no amount of sedatives seemed to afford her relief. For a year she had been under the care of a neurosurgeon and specialists in three excellent medical institutions, but had failed to improve. During this time she was constantly given barbiturates. Upon her arrival at the sanitarium she was taken off barbiturates and was given subconvulsive doses of insulin which served only to relax her. Being inaccessible to psychotherapy and pentathol, she was given an intensive course of ECT, sometimes requiring as many as four and five treatments a day. Very soon she became free of symptoms and required no sedation. After her amnesia began to subside, however, she developed abdominal distention and was advised by two prominent surgeons to submit to an emergency abdominal operation. The psychiatrist, believing the basis of this to be functional only, advised against this and administered ECT again, with the result that the abdomen became relaxed, and in four days the patient, now absolutely symptom-free, began to make

an excellent adjustment. This patient was given a total of 48 treatments and has returned, since her discharge, to receive psychotherapy. Her husband states that she is happy, is able to care for her children and is making the best adjustment she has made during the whole of their married life.

A married woman, 26, was admitted in July, 1949, to the sanitarium, where she remained for two months. In a state of hysterical weeping, anxiety, fear of dying, emaciation, making complaints of "choking" and of "going crazy," and assuming a fetal type of posture, she was brought in by her husband. The psychiatrist had to convince the husband of the advisability of giving ECT to his wife, all other types of therapy proving to no avail to the inaccessible patient. Intensive ECT was begun, and after the third treatment hysteria was brought under control and the patient became cooperative. As the symptoms of mixed psychoneuroses tended to recur when amnesia subsided, the psychiatrist saw fit to keep the patient more or less confused until the entire course of 17 treatments was completed. After disappearance of all symptoms and a gain in weight of 30 pounds, the patient said she had "never felt better in my life." She is now friendly, sociable, and making an excellent adjustment in her home. As may be surmised, her husband, likewise, is now a happy advocate of ECT.

The writer in reporting these end results of this empirical study feels that they are of great significance and trusts that they will provoke a profounder research in the field of convulsive therapy. He repeats that in treating the neuroses his best results through the application of ECT were obtained in tension and anxiety states, and depressions. He agrees with Wolfe<sup>2</sup> that almost any depressively-colored mental condition has a better prognosis for improvement if given ECT. He believes that, except in depressive states, the quick disappearance of symptoms in neurotics is rare. He believes that in the obsessive-compulsive neurotics, there must be intensive treatment in order to bring about complete disappearance of symptoms at least temporarily. He believes that, when he has the happy experience of discharging patients who leave the hospital feeling better than they have in years and later reporting that their working ability exceeds that of days before their illness, a moral issue is at stake and his electroshock therapy is symbolic of a humanitarian philosophy.

He further believes that large numbers of neurotics will continue to respond well to the "organic blurring;" and he predicts that, if ECT is used as a prophylaxis, the patient perhaps will be enabled to forego relapse. The writer cites Foster Kennedy's statement: "As regards length of treatment and number, I have gone up to 75 treatments without any harm, indeed with improvement. This number is small compared to the series of 248 successfully employed in a patient in a California State Hospital (Perlson).<sup>3</sup> The author reported that the patient had finally made a recovery from a severe schizophrenia. Intelligence tests show a fairly normal mental status." Kennedy further

states: "Recovery rather than any stated number of treatments is the goal of the therapist. . . . When the patient reports himself better, I give one or two additional treatments as reinforcement. . . . To patients whose response is slow or who relapse, I do not hesitate to give 15, 20, or more treatments." Regarding schizophrenic patients, Kennedy says: "Although I had good recoveries some five years ago when I employed 10 to 20 electrocoma reactions, I now follow the suggestion of Neymann and Kalinowsky<sup>4</sup> and employ a minimum of 20 in the initial series."

The writer believes that clinical findings should determine the use of ECT and that impairment in the fields of recall and concentration will completely clear up over a period ranging from a few weeks to 18 months. He also believes that 90 per cent or more depressed patients, when treated with ECT combined with psychotherapy, can be restored to normal living and to their customary activities, provided the psychiatrist is sufficiently experienced with his machine, understands his patients, understands the necessary dosage as well as the course of their illness, and is allowed sufficient rein to complete the full course of treatments. He agrees with Polonio and Fernances' (Barahona)<sup>5</sup> conclusion, that symptoms rather than psychiatric diagnosis should determine the type of therapy to be used.

Like Löwenbach and Greenhill,<sup>6</sup> he postulates that recovery in electro-shock therapy is dependent upon the occurrence of generalized convulsions. Myerson states that recovery is due to the memory difficulty experienced after ECT, when the mechanism of improvement and recovery seems to be to "knock out" the brain and reduce the higher activities, to impair the memory and thus cause the newer acquisition of mind, namely, the pathological state, to be forgotten. Coincidentally, the fact that ECT disorganizes the brain but does not destroy memory traces is proved by Kalinowsky's story that a refugee physician was treated for depression until he was so deeply confused that he lost the ability to speak English; nevertheless, a few months later, he passed a state board medical examination. Though, at present, no one seems able to explain satisfactorily what takes place when ECT causes confusion, it does appear that decortication<sup>7</sup> comes about, effecting a temporary disintegration of the higher levels of the personality, such as judgment, with confusion and euphoria. This process, however, is judged essential to recovery in order that the patient might be enabled to reorient himself and readjust himself to a higher level.

The writer concedes in all sincerity and modesty that he is not the only clinician administering polydiurnal treatments of ECT in an effort to relieve mental illness. Tyler and Löwenbach advocate multiple treatments daily. Thorpe<sup>8</sup> recommends

from three to six, and Geoghegan also uses polydiurnal applications. Hamilton reports successful use of ECT in psychoneuroses. He states: "If substantial benefit is to be obtained, dynamic psychotherapy work remains to be completed after shock therapy is administered." He further claims that the patients are often better than they had been before. He emphasizes the importance of having convalescence take place in a cultured environment in close contact with psychologically mature individuals in order to establish new healthy patterns. He further states that ECT is indicated for one-third of all the psychoneurotics admitted to the hospital. He reports that anxiety, tension and depression respond quite well; mixed neuroses do well; and 50 per cent of the obsessive-compulsive types respond to ECT. In confirmation is cited Hamilton and Wall's<sup>9</sup> report that of 50 patients, those whose symptoms were severe anxiety, tension and depression were most benefited. The recovery rate in the reactive depressions was nine of 11; in the mixed psychoneuroses, 17 of 18; and in the compulsive-obsessive group four were markedly benefited, four were improved, and only one was not improved. Simon considers ECT a method of facilitating the patient's introduction into the broad program of general reconditioning. Reznikoff finds ECT very valuable in treating war cases.

When Milligan published his first article regarding intensive ECT through polydiurnal treatments and incurred the vehement wrath of some readers of the *Lancet*, his cause was championed by Prestwick,<sup>10</sup> who in confirming Milligan's claims said: "I have yet to see the mental deterioration or the persistence of memory defect which has been feared. I am satisfied that it is a most notable advance in helping the psychoneurotic patient." Paterson<sup>11</sup> also defends Milligan, testifying to the good results of the concentrated method for chronic types of neuroses.

Though it may prove painful to revise cherished beliefs; yet, with the full realization that "The old order changeth," may the coming years experience a new acceptance of the practice of treating the severe psychoneuroses with electroshock therapy.

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## Surgical Treatment of Lung Abscess

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**T**HE SUBJECT of lung abscess is a complicated one that cannot be covered properly in twenty minutes. It is my intention briefly to refresh your memory on pathogenesis, pathology, differential diagnosis and medical treatment, as an introduction to an analysis of a group of cases I was privileged to study while a resident on the chest surgical service of Bellevue Hospital before the war, and to make a comparison of this group with another from the same service after the war. The contrast in results obtained in the two groups is noteworthy and is the basis for some conclusions on treatment and indications for surgery.

The pathogenesis of lung abscess is on the basis of either bronchial obstruction or the hematogenous implantation of virulent organisms. Bronchial obstruction can be produced by aspiration of foreign material into the lung with failure to expel it; 30 per cent of the cases in my 1940-41 series were either post-anesthetic or post-coma state. There is a high correlation of poor dental hygiene in these cases. I include the post-pneumonia cases in the group of bronchial obstruction, as I believe that the development of an abscess in the course of a case of pneumonia is due to inflammatory obstruction of a bronchial radicle. Neoplastic obstruction must be suspected and ruled out before making the diagnosis lung abscess.

Pathologically two types, aside from the multiple hematogenous variety, are recognized—the acute or uncomplicated and the chronic or complicated. The great majority of the acute ones are of the putrid or gangrenous variety. Many writers on this subject make an arbitrary differentiation between the acute and chronic on the basis of persistence longer than six weeks. I believe it is preferable to make two categories of these as: (1) simple, and (2) complicated abscess, as the complications that indicate a change in disease process and a consequent change in therapy do not all occur at the end of six weeks, and may occur before that time. These are spread, multiculation, hemorrhage, empyema, and persistence due to a change in the character of the lining and wall of the cavity.

In the differential diagnosis one must consider tuberculosis, bronchiectatic abscesses, pulmonary cysts, blebs and bullae, pyogenic empyemas with broncho-pleural fistulae in which no abscess can be demonstrated, and abscesses or lung cavities associated with tumors. All of these categories have been eliminated from the series under discussion.

The prognosis can be definitely related to the age of the patient and the duration of the disease, but not to sex or pathogenesis. All of the cures in the earlier group of cases were in individuals 49 years of age or under. Satisfactory bacteriological studies were completed in less than half of these cases, so no correlation is possible with specific organisms. However, the anerobic infections are clinically more virulent and more rapidly fatal; they are recognized by the putrid odor of the sputum and or the putrid odor of the empyema fluid.

An analysis of 48 cases treated in 1940-41 compared with 18 cases treated on the same service in 1946 shows the following pertinent differences:

### 1940—48 cases:

16 treated medically resulted in cure in 65%, improvement in 63%, death in 31%.

32 treated surgically resulted in cure in 50%, improvement in 12%, death in 38%.

Time in hospital—the greatest number spent three to six months, several a year or more.

### 1946—18 cases

8 treated medically resulted in cure in 77%, improvement in 33%, death in none.

10 treated surgically resulted in cure in 90%, improvement in 10%, death in none.

Average hospital stay was less than two months.

What factors played a part in this improvement? Several can clearly be noted:

1. Treatment of the patient's entire body economy was better carried out by the use of blood plasma, and high protein feeding in quantities not used before the war. A study of several lung abscess and broncho-pleural fistulae at Bellevue by Co Tui showed that 50 grams of protein a day may be lost in the purulent secretions—this is as much as is lost from a 50 per cent burn in the same period.

2. Penicillin was used in all of the 1946 cases and in none of the earlier series, when sulfadiazine was the chemotherapeutic agent of choice.

3. A more radical surgical approach was made—i.e., lobectomy was undertaken more frequently and earlier in cases that began to become complicated.

Comparison of these groups of patients shows that the problem is no longer one of saving the patient's life, as was the case in 1940-41, but one of adoption of the methods holding out greatest

promise of safely, rapidly and completely restoring the patient to health and employability. In a recent issue of the *Annals of Internal Medicine*, Stiveman and Kavee report cure in 17 out of 19 cases of acute putrid abscesses by the use of penicillin and sulfadiazine alone. Others, including Glover and Clagett at the Mayo Clinic, who reported a study of 37 cases in 1948, are not quite so sanguine about conservative management. However, it is generally agreed among those who write on the subject that acute putrid abscesses and empyemas are not quite the dire emergencies they were until recently.

On the basis of these observations, a program of management can be outlined from which generally favorable results can be expected. Such a program calls for close correlation of advantages offered by medical and surgical measures, respectively.

When the diagnosis is suspected, the patient should enter hospital for further study of his condition. Diagnosis is established by x-ray examination and studies to rule out tuberculosis and carcinoma. On admission, penicillin is started by injection and inhalation. Sulfadiazine is likewise given. Transfusions are given to raise the hemoglobin to normal and there maintain it, and a high protein intake is provided by whatever route is most practicable. Bronchoscopy is done early at least once to rule out bronchial obstruction by carcinoma or foreign body, and to aid in accurate localization of the lesion. Frequent check x-ray examinations and close observation of signs of toxicity are made. In a large proportion of cases, such a program can be expected to lead to resolution if in the early stages of the disease, and constitutes excellent preparation for surgery in the late and complicated stages.

Surgery is indicated as follows:

- I. Drainage—early cases
  - a progressive or persistent toxicity in early cases
  - b x-ray evidence of spread
  - c empyema
- II. Resection
  - A. Primary
    - a chronicity, spread, or multiloculation
    - b Hemorrhage
    - c suspicion of carcinoma
    - d anatomical site (upper lobe)
    - e foreign body
    - f in children
    - g residual bronchiectasis
  - B. Secondary to drainage
    - a persistent broncho-pleural fistula
    - b persistent abscess
    - c residual bronchiectasis.

In summary: A study of two groups of cases from the same service six years apart, experience with more recent cases not tabulated here, and a review of the literature to the present date, all combined, lead to the conclusion that lung abscess is now a disease having a good prognosis under proper management, including the early institution of radical surgical procedures where indicated—a problem calling for the close correlation of medical and surgical care.

Read before the Mecklenburg County Medical Society January 3d.

—714 Professional Building

#### SUDDEN OBESITY AND PSYCHOLOGICAL TRAUMA

(M. H. Fridjohn, in *British Med. J.*, Nov. 26th)

A woman, 36, married, one child, known to author for many years. In September, 1945, son, aged 7, was playing in the garden. The weather becoming chilly, mother called the child in and knotted a scarf around his neck; the boy returned to the garden, climbed a tree, slipped, the muffler caught in a branch, and he was hanged. He was discovered by his mother. The husband and father was overseas.

Doctor called in by neighbours, spent some time attempting to quiet patient who was screaming and calling for her husband. Gave her nembutal,  $4\frac{1}{2}$  gr. The husband arrived within 24 hours. After a week in bed, the patient spent most of her time in the garden gazing at the tree. For a few months she suffered from insomnia, and took sod. phenobarb., 3 gr. each night. Her sleep was disturbed by dreams of the accident; her husband did everything possible to help her.

January, 1946, noticed the patient was gaining weight; she stated that she had a large appetite and was always hungry. Her last period was prior to the accident; there was no evidence of pregnancy, and no abnormal signs could be found in any system.

During the next six months her mental condition showed some improvement, but she continued to dream about the boy each night. By August, 1947, her weight had increased to 13 stone (180 lbs.) from her usual 10 stone (140 lbs.). Appetite still voracious, and the amenorrhoea persisted. An estimation of her 17-ketosteroids revealed a normal figure.

It was impossible to remove her from her surroundings. Gave thyroid (4 gr.) in conjunction with dienestrol and progesterone; this had no effect in reducing her obesity or in promoting the menstrual flow. She continued to see me periodically. She was considerably helped by the patience and sympathy of her husband, and she talked freely to me about the accident at each consultation.

In October, 1947, the patient moved away from the scene of the tragedy. Four months later menstruation restarted, and from that time her periods were regular and normal. She lost weight; her appetite became more normal, and her depression lessened; her interest in life became more active. In March, 1948, she obtained employment. Her progress has been maintained, and she is now restored to normal mental and physical health; weight 10 stone, and she is most anxious to become pregnant.

#### EXOPHTHALMOS AND LOCALIZED MYXEDEMA

(Edi. in *Jl. A. M. A.*, Dec. 10th)

It is important to differentiate between the thyrotoxic and the thyrotropic, or pituitary, variety of exophthalmos. Thyroidectomy should not be done in patients with toxic diffuse goiter and eye changes suggestive of progression. The same contraindication is valid for localized myxedema.

# DEPARTMENTS

## HUMAN BEHAVIOUR

REX BLANKINSHIP, M.D., *Editor*, Richmond, Va.

### "PSYCHOPATHIC PERSONALITY"

THIS TERM is applied to various inadequacies and deviations in the personality structure of individuals who are neither psychotic nor feeble-minded, the defect existing particularly in the connotative, emotional and character aspects of the personality. These aspects are not well enough organized to permit coordination of the individual with his environment.

Pritchard, an English psychiatrist, used the terms "moral insanity" and "moral imbecility" to designate this group of disorders. The condition is a form of mental derangement in which the intellectual functions appear to have sustained little or no injury, malfunction being manifested principally, or alone, in the state of the feelings, temper, or habits. In cases of this nature, the moral or active principles of the mind are strangely perverted or deprived; the power of self-government is lost or greatly impaired, and the individual is found to be incapable, not of talking or reasoning upon any subject proposed to him, but of conducting himself with decency and propriety in the business of living.

Usually included in this group are persons who have been habitually abnormal in their emotional reactions since early childhood or youth, but who do not exhibit, except on occasions, a degree of abnormality that could be certified as insanity. They usually show no intellectual defect and they do not benefit under prison environment. They are a rebellious, individualistic group who fail to conform to social customs. Their emotional instability seems largely determined by a state of psychological immaturity which prevents them from adapting to reality or profiting from experience.

It is generally agreed that symptoms of the psychopath consist of certain indications of maladjustment, some of which are (1) delinquency and law breaking in general; (2) social incompatible behaviour; (3) emotional instability with ability to provoke emotional responses in others but void or shallow in their own responses; (4) aberrant sexual behaviour, such as homosexuality, sadism, masochism and rarer perversions, as well as chronic masturbation; (5) drug addiction and chronic alcoholism are usually considered evidences of psychopathy.

In the true psychopath, it is felt that the primary consideration is a defect state. "The psychopath is

characterized by defects of character and feeling tones, by poverty of sentiment and anomalies of impulse and temperament, and by exaggeration and deviation in emotional and instinctive reactions. This individual does not develop the type or degree of social qualities necessary for the demands of life and as a result of these defects in integration, the psychopath's response to moral, ethical and esthetic consideration remains inadequate. The behaviour of the psychopath often brings him into conflict with the law, but it more frequently violates the conventions of society."

In a study made of juvenile delinquents who were considered to be psychopaths, some of the characteristics shown by each were: (1) inability to make a satisfactory adjustment in their own as well as foster homes; (2) they showed little or no sense of assuming responsibility or accepting blame; (3) they lied frequently and evidenced little sense of shame; (4) they were quite excitable but did not seem to suffer deeply; (5) they were unable to learn from experience; (6) they stood out as being quite different from other children and showed little capacity for giving affection but seemed eager to receive it; (7) they were uninhibited and quite brazen in their sexual behavior.

The psychopath is the individual that frustrates the psychiatrist, that the preacher tries to convert and in whose case the judge suspends sentence, provided the offender leaves town.

It has to be admitted that the treatment of the psychopath is discouraging as he is generally not cooperative with any therapeutic plan. The behaviour of a certain number of psychopaths becomes more socialized as middle life approaches and their instability practically disappears. As one author states, "If personality is conceived of as only one part of a large structure that we may call character or the individual, we have a more hopeful and possibly a more fruitful therapeutic territory in which to work."

## DENTISTRY

J. H. GUNN, D.D.S., *Editor*, Charlotte, N. C.

### THE STERILIZATION OF CARIOUS DENTINE

AN EFFORT has been made<sup>1</sup> to find a chemical germicide suitable for sterilizing the mechanically sound carious dentine of a vital tooth. If such a germicide exists, it would be possible to treat carious dentine by excising the mechanically unsound tissue and sterilizing the mechanically sound tissue. As a result, natural calcific barriers between infected tissues and the pulp would not be removed, thus lessening the pain of cavity preparation

1. J. L. Hardwick, in *Proc. Royal Soc. of Med. (Lond.)*, Oct.



and the pulpal irritation due to mechanical and thermal stimuli caused by the cutting of the cavity. In addition, fresh dentinal tubules along which chemical irritants from unsuitable cavity linings and cements could subsequently diffuse would not be opened over the floor of the cavity.

A suitable germicide would have to be penetrating and non-toxic to the pulp even if applied to vital dentine.

An investigation into the efficiency of over 30 agents as bactericides for carious dentine was carried out, and it was shown that the soluble salts of the heavy metals, as a group, are most successful in the sterilization of various dentine. Of these, silver nitrate, either in the ammoniacal or the concentrated aqueous form, was the most effective.

Examination of histological sections of teeth in which cavities were prepared and which were treated with various bactericides shows that silver nitrate applied to exposed vital dentine produces a remarkably slight reaction in the pulpal tissues. This is due to the precipitation of the silver nitrate in a less toxic form by the tissue fluid chlorides, phosphates and proteins within the dentinal tubules. The precipitation results in diffusion currents carrying still further chlorides, phosphates and proteins into the affected dentinal tubules from the tissue fluid spaces of the pulp. These insoluble precipitates may be carried down the tissue fluid spaces of the pulp and peripherally into other dentinal tubules without causing gross damage to the cells with which they come in contact.

In cases of successful applications of the ammoniacal silver nitrate to exposed vital dentine, it is seen to penetrate the tissue fluid channels of the dentine, including the lateral communications of the dentinal tubules. Applied to carious dentine, the superficial layers of the caries become thoroughly impregnated with the silver salts; the deeper layers may also be seen to contain silver particles which, however, are thought to represent silver in a less toxic and bactericidal form.

A fairly closely related subject, that of penicillin sterilization of the root canal is reported on<sup>2</sup> in the same journal.

In certain cases penicillin-impregnated points can rapidly sterilize the root canal. It is probable that penicillin-sensitive organisms in the lateral and apical canals will be reached by the antibiotic owing to its ready diffusibility, even in the presence of blood, pus and necrotic tissue.

In the cases of failure it was found that penicillin-insensitive organisms were present to the extent of a very few colonies. When the penicillin had caused the disappearance of the sensitive organisms, the insensitive ones were enabled to multiply.

Such cases should be treated either by chemical

2. W. G. Cross, in *Proc. Royal Soc. of Med.* (Lond.), Oct.

methods and apicectomy, or perhaps by the combination of penicillin with a drug capable of destroying the Gram-negative organisms, e.g., streptomycin, as suggested by Bartels and Buchbinder.

## UROLOGY

RAYMOND THOMPSON, M.D., Editor, Charlotte, N. C.

### URECHOLINE IN DYSFUNCTIONS OF THE BLADDER

UROLOGISTS of the Hospital of the University of Nebraska College of Medicine have investigated the usefulness of urecholine and the results are reported.

Urecholine is one of a group of choline esters that act primarily as stimulants of the parasympathetic nervous system. When administered in therapeutic dosages orally or subcutaneously there is little or no effect upon the heart rate, blood pressure or peripheral circulation of normal human subjects, but the drug stimulates peristalsis and micturition.

There are many cases of chronic urinary retention from hypotonic dysfunctions of the bladder without any evidence of mechanical vesical neck or urethral obstruction. In some instances vesical-neck obstruction has been removed by prostatectomy or other surgery yet residual urine continues. These situations may be due to a central nervous system lesion or a weakened detrusor muscle.

Although the drug is not effective in every instance, it appears that it answers the need for an effective agent, free from severe side reactions, to decrease vesical capacity, increase vesical tone and contractility, and reduce residual urine in certain patients with chronic hypotonic dysfunction of the bladder. Methods of management suggested:

1) For chronic hypotonic dysfunction of the bladder: Urecholine 10 to 20 mg. orally every 6 to 8 hours. (The drug has been continued daily for as long as 3 months without evidence of harmful effect.) Test for residual urine every 2 to 4 days until base line is reached.

2) For acute postoperative urinary retention: Urecholine 10 to 20 mg. orally or 5 mg. subcutaneously. Repeat if voiding does not occur within 30 minutes. Catheterize if second dose is not successful.

—Medical Arts Bldg., Omaha, Neb.

\*Urecholine is the registered trade-mark of Merck & Co., Inc., for its brand of bethanechol.

1. L. W. Lee, Omaha, in *Jl. Urology*, Sept.

MANIPULATIONS UNDER ANAESTHESIA are dangerous unless in skilled hands, as the natural brakes of muscular resistance are removed and there is a tendency to do too much and so set up an excessive reaction.

THE TWO-FACED ATTITUDE of extolling the value and virtues of the general practitioners, while insisting that they aren't fit to practice, must be changed—Editorial in *Wis. Med. Jl.*, Oct.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### UNUSUAL MANIFESTATIONS OF MALARIA

MALARIA is an arch-simulator and a great mimic of all diseases. In spite of the classical division of pernicious malaria into types—cerebral, algid, gastrointestinal, cardiac, renal, purpuric, etc.—a practitioner is sometimes faced with very peculiar symptom-complexes, and becomes bewildered regarding the probable diagnosis. During practice in malarious districts for more than 16 years Nandi<sup>1</sup> encountered many such puzzling cases.

A healthy robust boy aged 12 suddenly lost consciousness and fell while taking his meal before going to school. Seen within an hour, he was having epileptiform fits; t. and b. p. were normal, the liver and spleen were not palpable, and no abnormality was detected in the heart and lungs. The pupils were moderately dilated and reacted sluggishly to light. Question of epilepsy arose—although he had never had such an attack before—or of cerebral malaria. A few M. T. rings were found in the blood slides. Quinine was given parenterally and the boy recovered after being unconscious for 48 hours. No history of malaria within six months of the attack; the t. rose to 100° F. four to five hours after the attack.

A postal clerk, 40, complained of a severe burning sensation and pain in both hands, including the fingers, for a week. Pain was severe enough to prevent sleep. There was an erythematous flush of both palms, fingers slightly swollen, the tips extremely tender; t. 100 to 103. There was a history of recurrent attacks of malaria. Local doctors prescribed sedatives, sulphonamides, and hot boric compresses, but without the slightest relief. He appeared to have acute lymphangitis, and thinking it might be of filarial origin blood was sent for examination for eosinophilia and microfilaria; surprised to hear that the slides revealed M. T. parasites. With hesitancy quinine was given, and t. dropped to normal, redness and swelling of palms and fingers, pain, and burning all diminished after one injection of 10 gr. of quinine bihydrochloride, and full cure was had from three injections.

A boy, aged 14, had fever on returning from school, and a chill but no rigor. The next a. m. he was seen by a local doctor, who gave him quinine. That p. m. t. 104, difficulty in swallowing, voice nasal, regurgitation through nose. The doctor thought it was diphtheria, and another was called in. There was no patch in the throat; the boy was fully conscious, and had a high t., slight enlargement of the spleen, and paralysis of the soft palate; no other abnormality detected. Blood showed M. T. rings. Uneventful recovery after one week's course of quinine.

A man of 30, had a severe headache after a morning walk, a little later he became unconscious and had convulsions—twitchings of face and arms severe; p. 30 to 35 and irregular; b. p. 120/78; pupils slightly contracted, equal and feebly reacted to light. Jerks rather brisk, Babinski reflex flexor, abdominal reflexes sluggish; t. 98, liver and spleen not enlarged. Adams-Stokes syndrome was diagnosed by a local doctor. On inquiry it was learned that the patient had had two or three attacks of malaria six months before. Blood showed M. T. rings on slide. Quinine was first administered IV with glucose, then IM, and the patient recovered after being unconscious for seven days. During this time he was fed by intragastric drip, and atropine, adrenaline, and nikethamide were given. T. on first day rose to 99, on subsequent days from 97 to 101.

1. A. A. Nandi, Calcutta, in *British Med. J.*, Dec. 3rd.

A man, 24, brought in with history of severe pain in the abdomen and vomiting for 48 hours. He was very dehydrated, tongue coated and dry, p. rapid and feeble, abdomen greatly distended, tender and rigid epigastrium. There was bilious vomiting and absolute constipation for two days. T. 99, spleen and liver not palpable; pronounced distention of the abdomen. Admitted to a surgical ward as "acute abdomen" for immediate operation. During preparation for operation the patient had a severe rigor and t. went to 105. Blood showed Q. T. parasites (band forms). Transfer to medical ward, 10 gr. quinine bihydrochloride with normal saline and glucose IV q. 6 h. for 3 doses—dramatic recovery.

The details of these cases are well worth bearing in mind. Most doctors of long experience can recall cases in which needless operations were performed, life was seriously threatened, or even lost, because malaria was misdiagnosed. Cancer, syphilis and malaria should be automatically considered as possibilities in any case difficult of diagnosis.

### USE CAUTION IN USE OF NOSE DROPS (Editorial in *J. A. M. A.*, Oct. 12th)

Many of the nasal preparations offered for sale are far from innocuous. Severe reactions have been reported to follow instillation of salts of various sulfa drugs and severe local effects have been reported from prolonged use of preparations that cause constriction of the blood vessels.

At least seven patients lost their ability to smell or had a continuous sense of smelling bad odors from use of preparations containing tyrothricin. Although the disability was temporary in some patients, it has lasted more than a year in others.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### FRACTURE OF THE CLAVICLE

THE OBJECTS of treatment are to so raise the shoulder as to bring the two fragments of the broken bone into alignment; to pull back the shoulder so as to prevent overriding of the broken bone; and to restore full length, with fixation in that position until union has occurred. The simplest and most generally satisfactory method of accomplishing these aims is by the use of the figure-of-8 bandage.

Two or three large flannel or calico bandages are employed, passing round each shoulder in turn and crossing each other posteriorly. These bandages are applied firmly, the shoulders being pulled back by each turn of the bandage. When the bandages have been firmly fixed in this position by pinning or tying, a firm loop of bandage is attached to each shoulder loop in front across the chest. This simple method of retention keeps the original figure-of-8 in position and prevents the bandage slipping from the shoulder.

A Britisher<sup>1</sup> does not hesitate to say this old simple method is not only as good as any other, it is the best method.

1. T. P. McMurray, in *British Med. J.*, Nov. 19th.

When fixed in this way the patient is encouraged to use the hand, fingers, and elbow in order to prevent stiffness of these joints, a complication which is to be feared in the adult patient. After four weeks union is usually satisfactory, and the patient may be allowed freedom from all control, gradually restoring full movements at all the joints by voluntary exercises. A sound, fully functional limb is to be expected, with no disability except for the presence of a bony nodule at the site of fracture.

To fixation by applying strapping around the arm and chest to pull back the shoulder and pull the elbow upwards and forwards the procedure generally taught in the textbooks for many years, there are so many disadvantages that it has now been largely superseded by the less troublesome fixation by bandages.

#### A SIMPLE METHOD FOR THE MANAGEMENT OF SCALP WOUNDS

A PLAN for which simplicity, minimum of discomfort and apprehension to the patient are claimed, is outlined by a D. C. doctor.<sup>1</sup>

There was primary healing without serious infection in 365 wounds. The wounds were caused by glass, slate, stones, bricks, sharp objects, black-jacks, sandbags, crane buckets, steel beams, falling timber. In the vast majority they were of the clean type.

The wound and scalp are thoroughly washed with either sterile normal saline or zephiran solution; repeated washings are necessary for the removal of all loose debris and blood. No attempt is made to shave the scalp or remove the hair adjacent to the edges of the wound. After adequate washings, the wound is carefully evaluated. It is well to make x-ray films of all scalp wounds. All devitalized tissue is debrided. Local anesthesia is not instituted.

If the wound is superficial it is dusted with sterile sulfathiazole crystals and the skin edges approximated with Michel clips 3/8ths of an inch apart.

A minimal number of 00 chromic sutures are placed in the fascia and muscles in a deep wound. Again, sulfathiazole crystals are applied and the skin edges approximated with Michel clips. Drains are used in most scalp wounds.

In the event of partial avulsion of the scalp, following the washing and debriding the muscles and fascia are closed with 00 chromic catgut, the wound dusted with sulfathiazole crystals, and the clips applied to the skin. Penicillin is not employed locally, nor is it a part of the aftercare of scalp wounds. Dressings are not applied. The hair is simply pulled over the clipped area. Routine is

the use of tetanus antitoxin alone, or with gas bacillus vaccine, depending on the circumstances surrounding the injury. The patient is instructed to return to the office within 24 hours. With the superficial type of wound, a firm blood crust is usually seen at this time. The patient is not to comb his hair. After 48 hours the wound is observed again. If primary healing has taken place, the skin clips are removed and the patient is warned to avoid trauma for another five to seven days. A final examination is then made. In extensive wounds the scalp clips are left in place for 72 hours. If a hematoma develops, the wound is aspirated under sterile precautions with an 18-gauge needle.

Very welcome is this article, which backs up the methods commonly employed by many good G. P.'s in dealing with the many scalp wounds which occur in their practice.

## HISTORIC MEDICINE

### THE RISE AND PROGRESS OF MEDICAL EDUCATION IN SCOTLAND

IN AN ADDRESS to the New York Academy of Medicine last March, Guthrie<sup>1</sup> traced the spread of medical knowledge down the centuries—from Greece to Rome, then to the Moslem Empire; back again to Europe by way of Salerno, thence to Padua, Paris and Leyden, and at last to Britain and America. As the centuries unfolded, the center of medical education shifted from place to place, each new seat of learning contributing its quota. Scotland played a noteworthy part in this march of medicine.

Medical education, we are told, has been and may still be regarded as one of the major activities of Scotland. Before the 16th century the career of medicine was open to all who cared, or dared, to embark upon it, and even after regulations were framed, the standard of medical efficiency remained very uneven. The General Medical Council which controls the practice of medicine in Britain, came into being less than a century ago. Before 1858 there was no Register of "duly qualified" practitioners of medicine.

We have very little information regarding primitive medicine among the ancient inhabitants of Scotland. There may have been a special class of Medicine Men during the Stone Age. Certainly some such persons had their place during the Bronze Age. The healing art was probably in the hands of a priestly class, the Druids.

The medical practice of those ancient Scots, or Picts, was influenced by various early invaders.

1. Douglas Guthrie, Edinburgh, in *Bull. N. Y. Acad. of Med.*, Aug.

1. P. Frohman, Washington, in *Md. An. D. C.*, Dec.



The Roman Army possessed medical officers, and certain surgical instruments found in Scotland are relics of the presence there of Roman military surgeons. Considerably later came the Saxon "leeches." In one of the oldest Saxon manuscripts, the "Leech Book of Bald," dating from the 10th century, there is mention of a number of Scottish herbal remedies.

Early in the Christian era, a knowledge of medicine was fostered by some of the Saints, notably by St. Columba (563 A. D.), who had a hospital and herb garden on the Island of Iona; and by St. Cuthbert (635-687), who wrought wonderful cures in the South of Scotland and Northumbria in the 7th century. As late as the 16th century, medical practice was an accomplishment handed down in certain families in the Western Isles, notably Islay and Skye, where the Macbeths and the McConachers were the accredited medical practitioners. They possessed manuscripts of Hippocrates, Galen and Avicenna, translated into the Gaelic tongue, some of which are preserved in the National Library of Scotland, in Edinburgh. Michael Scot (1175-1232) studied and taught in the famous medical school of Salerno, and brought back to his native country the current learning of the time, albeit interlarded with much magic and astrology.

The first Scottish university was founded in 1411, at *St. Andrews*, the ecclesiastical capital and a place of great importance. Although provision was made, in the original charter, for a Faculty of Medicine, there appears to have been little teaching of medicine until the 18th century. Medicine was merely one subject of the Arts course, a part of that modicum of general knowledge regarded as essential to every well-educated man.

The most famous Scottish medical man of the 15th century was William Schevez (1428-97). A native of *St. Andrews*, he had studied at Louvain, and became physician to King James III at a salary of "20 Pounds per annum, a velvet gown and oats for two horses." Eventually, he became Primate of Scotland. Schevez bequeathed his excellent library to *St. Andrews University*; many valuable incunabula there bear his signature.

There was little or no teaching in Medicine in Scotland until after the reformation; then John Knox laid down in his Book of Discipline of 1560, that Glasgow should teach only Arts; Aberdeen, Law and Divinity; while *St. Andrews* was to be the Medical School of Scotland. This plan was never put into effect, and the only result was that *St. Andrews* continued for many a year to exercise the privilege of granting, or perhaps one should say, of selling, the degree of M.D. Among those who took advantage of this arrangement during the 18th century were Jean Paul Marat and Ed-

ward Jenner. In 1772, the Duke of Chandos offered to *St. Andrews* a sum of money to endow a chair of "eloquence." The University decided that a chair of medicine might prove more useful, and Thomas Simson was appointed. A Medical School was gradually evolved, although it did not become fully established until in 1897 it joined forces with University College, Dundee, which had been established in 1881.

*Aberdeen* was the third of the Scottish Universities to be founded, but the first to institute regular medical teaching at a time when there was no other organized medical school in Britain.

In the 14th century the medical practice was largely in the hands of "skilly women," or of lairds who attended to the health of their retainers. From the very start, provision was made at *Aberdeen* for the teaching of medicine by the appointment of a "Mediciner" at a salary of 12 Pounds a year, with the right of salmon fishing in the River Don.

Students were obliged to commence work at 5 a. m. and to be in bed by 9 p. m., although once a week they were permitted to amuse themselves on the links. In 1741 was established an Infirmary for "poor persons who have distemper upon their bodies and such others as meet with the misfortunes of broken bones."

Andrew Moir was Anatomy lecturer in 1831; his dissecting room was burned down, in protest against the activities of "resurrectionists" in *Edinburgh*, yet the lecturer maintained his prestige, continuing to teach until his death from typhoid fever at the age of 38.

In the 16th century *Glasgow* had a population of only four or five thousand. The University had been founded in 1451, but Medicine was not actively taught for a long time. There was no control of the practice of medicine in and around *Glasgow* until the Faculty of Physicians and Surgeons was founded by Peter Lowe in 1599. Lowe, who served for 20 years in the Army of France and had published in 1597 a *Discourse on the Whole Art of Chyrurgerie*, the first textbook of surgery to be written in English.

The first professor of Medicine, Robert Mayne, was appointed in 1637 but he appears to have accomplished little. The real founder of the Medical School of *Glasgow* was William Cullen. Born at Hamilton in 1710, he began his career as a general practitioner in his native town, in partnership with William Hunter. The *Glasgow Medical School* was well staffed and consolidated by the end of the 18th century. The Royal Infirmary of *Glasgow* was opened in 1794, equipped with 150 beds and "two sedan chairs to convey patients to and from their homes."

By far the greatest figure of the School was Jo-



seph Lister, who went from Edinburgh in 1860 to become Professor of Surgery, and who introduced his antiseptic principle in 1865.

*Edinburgh*, the youngest of the Scottish Universities, was founded in 1583. Anatomy and Surgery have been subjects of instruction since the beginning of the 16th century. Archibald Pitcairne was appointed Professor of Medicine in 1685; he has appointed Professor of Medicine at Leyden in 1692; language difficulties did not exist because all teaching was conducted in Latin.

John Monro, a surgeon in the Army of William of Orange, was so greatly impressed by the Leyden methods that he resolved that Edinburgh should have a Medical School, conducted on similar principles. He educated his son Alexander at Leyden with a view to having him appointed Professor of Anatomy at Edinburgh. Alexander was succeeded by his son, Alexander, secundus, who was followed by the grandson Alexander, tertius. Monro secundus maintained the tradition of his father, indeed he was even more distinguished, but Alexander tertius was content to read his grandfather's notes, over a century old, to his class, without even deleting the remark, "When I was a student at Leyden in 1719."

Sir Charles Bell, John Barclay, Robert Knox, Robert Liston and James Syme were distinguished teachers of Medicine at Edinburgh. Liston became Professor of Surgery to University College, London, where he was the first surgeon to employ ether as a general anaesthetic. The greatest Edinburgh surgeon before the time of Lister was Lister's father-in-law, James Syme, of whom it was said that he never "wasted a word, a drop of ink, or a drop of blood."

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### SPINAL ANESTHESIA IN OBSTETRICS

AN OMAHA OBSTETRICIAN puts forth convincing argument for the value of spinal anesthesia, its safety to mother and babe—in short, that it is close to ideal in the vast majority of cases.

It is simple to do, is inexpensive, no special apparatus is necessary. It requires no extra personnel. The mother appreciates being in a painless and rational state. It reduces the incidence of apnea in the new born, of blood loss in the third stage, and does not inhibit uterine contractions. It provides complete perineal relaxation.

You may choose to give the anesthetic well in advance of the expected delivery time or you may give it terminally. You may repeat the injection when it is necessary. Usually the block is given

during the late second stage of labor. As a physician gains experience he may use this method during the latter part of the first stage, when the cervix is 5 to 6 cms. dilated, contractions at 3 to 4 min. intervals, when labor is progressing satisfactorily and the head is fixed in the pelvis.

The choice of this obstetrician is the nupercaine-glucose combination, called heavy nupercaine, which may be purchased in ampoules containing 2.0 c.c.—each c.c. 2.5 mgm. of nupercaine hydrochloride and 50 mgm. of dextrose. One c.c. of this mixture is usually sufficient for a successful saddle-block anesthesia.

Onset is rapid and lasts for 2 to 4 hours. By the addition of adrenalin to the mixture the duration of action is greatly increased up to 8 to 9 hours. Unless one is attempting to provide the patient with an entirely painless labor, this increase in the duration of the anesthesia is not indicated.

The injection is given with the patient in the sitting position, legs over the side of the bed or delivery table, elbows on knees, patient supported by an attendant. The injection is made in the lower lumbar region. No barbotage should be used. A short-bevel spinal needle, 20 or 22, is used. Only enough spinal fluid should be withdrawn to insure a free flow.

The injection should be made between uterine contractions; otherwise the mixture may be forced upwards. No infiltration of soft tissues is made. Have the solution ready in the syringe before the spinal tap is made, inject immediately.

The patient is kept upright 30 to 60 seconds when a 2.5 mgm. injection of nupercaine is used; 2 min. when a 5.0 mgm. injection is used. The patient is then immediately placed supine with the head supported.

Nupercaine in aqueous solution is precipitated in an insoluble base by the slightest amount of alkali. Rinse all needles and syringes with distilled water or acidified tap water prior to autoclaving.

Analgesia should extend almost to the umbilicus, with complete relaxation of the perineal area and some paresis of the leg and thigh muscles. There should be no diminution in the number or force of uterine contractions. The patient is able to bear down if requested to do so. There will probably be some upper abdominal discomfort during traction with the forceps. If nitrous oxide and oxygen is needed for this short period, it should be given. On few occasions is it necessary.

There should be no drop in the b. p., no nausea or vomiting. Give no food or fluids during the labor.

Premedication is evipal by rectum and scopolamine by hypodermic.

The majority of these patients were delivered by forceps, and episiotomies were done. The only com-

plication observed was an occasional post-partum headache.

Thompson believes that in the majority of cases spinal anesthesia offers a simple method of obstetrical anesthesia. He says the doctor will appreciate it, the mother will appreciate it, and the baby would appreciate it if the baby could know of its advantages.

#### THYROID IN MENSTRUAL DISORDERS

(O. Barnes, in *Arizona Med.*, 6:33, 1949)

In the majority of patients with menstrual irregularities, no evidence of pathology can be found. This group the general practitioner can manage quite successfully. Low B M R and low axillary temp. will be found in practically all these cases.

Desiccated thyroid was administered to 143 such patients, usually 1 grain daily for one or two months. If the basal t. was unusually low, initial dose of thyroid was 2 grains. If symptoms persisted and basal t. remained low, daily dosage was increased one grain for the following month. Maximal dosage was 4 grains daily. One patient developed symptoms of hyperthyroidism, which subsided upon reducing the dose.

Of 48 patients with dysmenorrhea, only 5 failed to experience relief; 35 were completely relieved. Three of the 5 treatment failures had organic disease.

Excessive bleeding was treated with desiccated thyroid in 50 cases. Two failed to improve; 2 others improved; and 46 resumed periods with normal flow.

Irregular menstrual cycles were the chief complaints of 45 patients. Two failed to respond to thyroid therapy; 2 improved; and 41 were cured.

Voluntary discontinuation of medication by many patients was followed by return of complaints, and desiccated thyroid again brought relief.

Fatigue, large sleep requirement, nervousness, irritability, poor appetite, and underweight were corrected in many cases.

Although therapy can be stopped after a few months without a return of menstrual symptoms, many patients will return because they do not feel as well as they did during treatment. There would seem to be no objection to continuation of thyroid therapy as long as the basal t. is not elevated above normal.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### CRITIQUE OF REPORTS OF SURGICAL AND DIETARY THERAPY IN HYPERTENSION

IT SEEMS CLEAR that the complications and mortality of hypertensive vascular disease have not as yet been strikingly decreased, despite the glowing reports of the successful dietary, surgical and other treatments of hypertension.

Many years ago, Ayman<sup>1</sup> reemphasized the well known but still neglected fact that the variations of blood pressure levels in essential hypertension is one of the clinical characteristics of the disease. The rise of b. p. is usually due to emotional reactions, either pleasant or unpleasant; and the

drop to relaxation and calmness. The variations may amount to 100 mm. systolic and 40 mm. diastolic in the course of minutes. A constant higher level of b. p. may last for days or weeks. A period of treatment is a period of reassurance, calmness and a lowering of b. p. Many patients have been seen whose b. p. at the first visit was 260/120 and at a second visit, a few weeks later, 118/80 after only mild sedation and great reassurance. Placebos given to hypertensive patients have produced 80 per cent of symptomatic improvement. During the summer months b. p. is often lower, in the hospital, clinic or office usually higher, than in the home as determined by a member of the household.

The original papers on the rice diet in 1944 were titled "Treatment of Kidney Disease and Hypertensive Vascular Disease with the Rice Diet." In this and subsequent papers it is evident that this treatment was carried out principally on patients with acute or chronic nephritis and/or congestive heart failure. In such cases it has always been common to find improvement in heart size and b. p. on the rice diet, a low-sodium, low-protein diet, or receiving digitalis with diuretics. It is clearly necessary to discard all such cases in talking about the effects of the rice diet in pure hypertensive vascular disease.

In studies of the effect of the diet on b. p., in "hypertensive vascular disease without conclusive evidence of 'secondary' renal involvement," results in 28 cases are listed as unimproved and in 37 cases as improved. Of the 37 improved patients, 20 were on the diet a month or less when the paper was written. The results of the diet on b. p. are therefore not acceptable because they lack careful, scientific control. Whatever drops in b. p. were noted are easily explained on the basis of frequent determinations, reassurance, enthusiasm and relaxation.

In all diets, the effect of striking weight reduction as a cause of decrease in b. p. could be ruled out only by maintaining the patient's weight. All agree there is much weight reduction with the rice diet, some with the low-sodium diet. Any drastic dietary restriction will lower b. p.

In studies on sympathectomy it is evident again that the glaring defect is the usual brief control period of observation before operation.

It is not concluded that dietary or surgical therapy is useless in hypertension. There has been an occasional, definite, moderate improvement in patients on the rice diet and low-sodium intake; in more cases response is made to sympathectomy.

The purpose of Ayman's paper is to point out reasons why he does not obtain the results claimed by the authors of such studies when he carries out their therapeutic measures in a controlled manner. It may explain to others their own apparently suc-

1. David Ayman, Boston, in *Jl. A. M. A.*, Dec. 3rd.

cessful as well as unsuccessful experiences:

From discussion of Dr. Ayman's paper by DR. FREDERICK ALLEN:

Most physicians remain unaware that the Allen-Sherrill investigation in 1922 included the first adequately strict exclusion of chloride, bicarbonate and other sodium salts, consequently the first account of salt-deficiency symptoms and precautions against deaths such as recent authors report. The biologic relation of salt to b. p. is proved by abundant confirmations, since my clinical experiments in 1920, that ingestion of salt raises b. p. in normal and hypertensive animals and persons; that the profound vascular atony of shock demands sodium salts, not the plasma proteins of the academic authorities. Kempner's recent regimen, through his scientifically unfounded ban on protein and condiments, hinders the necessary permanent dieting, which is simple with the diets described in my book (1925). He is now where I was in 1922, with a four-year experience, the same benefits and the identical proportion of refractory cases, namely, 30 per cent.

DR. DAVID AYMAN: The rice diet in my experience has been useless except in an occasional patient.

### THE USE OF WHOLE BLOOD, BLOOD PLASMA, BLOOD DERIVATIVES, AND BLOOD SUBSTITUTES

THE TRANSFUSION of blood is a procedure which lends itself to the dramatic. When I was an interne it was a common thing to see that some "hero" had "given his heart's blood" to save the life of his wife, child or parent. Apparently it occurred to nobody but a few hard-headed internes that no more heroism is involved in giving blood into another's vein than having it shed into a washbasin.

The late war gave great impetus to the therapeutic use—and abuse—of transfusion of blood, its derivatives and its substitutes. There is a crying need for a critical evaluation of the procedure. No one knows more than Kracke about this important subject. What he and an associate<sup>1</sup> say about it follows in essence.

Indications for the use of whole blood are thus summarized:

The treatment of anemia when no other form of antianemic therapy is effective, or to maintain the patient until a diagnosis can be made.

As a preoperative or postoperative measure, as in the treatment of acute or chronic hemorrhage or shock.

As an adjunct to other forms of therapy for combating infections.

To aid control of bleeding in the various purpuric diseases.

In elaboration, these authorities enter into particulars.

Whole blood may be used to advantage in any and all conditions in which it is necessary to increase the number of circulating red cells, in conditions of shock, and to sustain life in patients who are bleeding. For nearly all of these conditions,

1. R. R. Kracke & W. H. Riser, Jr., Birmingham, in *Sou. Med. J.*, Oct.

whole blood is far superior to any of its derivatives, including blood plasma. Since pooled plasma from Red Cross stocks has been available, its use has been much overdone and, in general, we are much better off without it.

In recent years it has become customary to utilize packaged equipment which contains a suitable collection bottle with necessary tubing and needles attached, the same bottle then being used for administration of the blood, after which the entire equipment is discarded.

Whole blood should be drawn into a disposable container with a suitable anticoagulant to which has usually been added a sufficient amount of dextrose to preserve the red cells for as long as 30 days. This blood may be used at once or it may be stored at a t. of 5 to 10° C.

Donors should be not less than 18 years of age, and give no history of recent illness, particularly sore throat, or chronic illnesses as malaria, persistent cough or pain in the chest, nor of fainting spells or convulsions. No blood should be taken within four weeks of a previous donation or if body t. is elevated. The donor should have at least 80 per cent hgb., b. p. and pulse range normal. A serologic test should be performed invariably, but this does not always prevent the transmission of syphilis. Blood should not be taken from a donor who has had jaundice. *It should be taken only from fasting donors.*

Blood from the donor may be used fresh or stored at a t. between 5 and 10° C. The platelets disintegrate rapidly. The leukocytes have disappeared by the 5th or 6th day of storage. The red cells are satisfactorily preserved in citrated dextrose blood for 30 days. Complement and prothrombin are largely inactive at the end of one to two weeks.

*The longer the blood stands the more the bacteria and viruses become attenuated.*

The blood group of both donor and recipient must be determined, and it is even more necessary that the blood cells of each be cross-matched against the serum of the other. Group O blood may be safely administered to patients of all groups, provided the titer of agglutinins in such blood is low. Universal donor blood (group O) can be made even safer by the addition of Witelsky's A and B group-specific substances which is commercially available.

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#### A SIMPLIFIED CAFFEINE GASTRIC TEST MEAL FOR THE DIAGNOSIS OF PEPTIC ULCER

(V. H. Busick et al., Oklahoma City, in *Jl. A. M. A.*, Nov. 19th)

A simplified caffeine gastric fractional test meal is presented, which is suitable for office practice and which gives superior data in that it allows the determination of the total amount of HCl secreted and the expression of the



results in milligrams. The test is of diagnostic significance and is of particular value in the differentiation of ulcer patients from nonulcer patients.

Over 30 per cent of 34 ulcer patients secreted more than 300 mg. of hydrochloric acid during the 90-minute test period, whereas less than 10 per cent of 74 nonulcer patients secreted 300 mg. of HCl during a similar period.

For details see your *Jl. A. M. A.*

#### "ABDOMINAL EPILEPSY"

(Harold Stevens, Washington, in *Md. An. D. C.*, Nov.)

The syndrome of abdominal epilepsy is characterized by the sudden onset and brief duration of abdominal pain occurring in a patient with a known convulsive disorder and abnormal electroencephalogram, with both the periodic abdominal pain and the seizures responding to anticonvulsive drugs. The attacks of pain occur in far greater frequency than the convulsive seizures. The diagnosis can readily be made by means of a careful history and an electroencephalogram. Half of the 12 reported cases were associated with organic brain disease.

## PEDIATRICS

ALBERT M. EDMONDS, M.D., *Editor*, Richmond, Va.

### A NEW NEONATAL SYNDROME

DURING the 10-months period Dec., 1946, to Oct., 1947, according to Mills,<sup>1</sup> a new syndrome affecting infants appeared in the nurseries of the Birmingham Maternity Hospital. Eight cases were observed, the predominant feature being a circulatory disturbance in one or both lower limbs, while some cases in addition showed muscular weakness or palsy. The case incidence was sporadic, and on only one occasion was the interval between cases less than three weeks. The aetiology is unknown; neither the medical nor the nursing staff could recall similar cases. It was concluded that the syndrome must have been caused by some new factor, such as a new line of treatment, that had never before operated.

To summarize the eight cases: The chief characteristics include the onset of vascular disturbances shortly after birth in one or both extremities, with a predilection for the gluteal region, and sometimes a flaccid paralysis of the limb. In one infant there was a fatal issue from cerebral haemorrhage; in another the inferior mesenteric vessels were affected and the child died from peritonitis; in a third there was residual paralysis of the anterior tibial group of muscles. All the remainder recovered fully.

After the occurrence of the seventh case a determined effort was made to establish a diagnosis, and various theories were put forward. The unilateral bruising of the buttock suggested thrombosis or embolism of the inferior gluteal artery, which in foetal life represents the main arterial axis of the lower extremity, and contributes the chief blood supply to the sciatic nerve. Embolism was consid-

ered improbable on account of the bilateral effect in one case and the mesenteric lesion in another. No cause could be adduced for a primary thrombosis. The obstetric procedures were so diverse, including spontaneous, forceps, breech, and cesarean deliveries, that there seemed small chance of finding a common factor. However, it was observed that all infants had been born in a state of white asphyxia, and all had required at least one injection of nikethamide for resuscitation.

The resuscitation of the newborn is always an emergency procedure. The anaesthetist or a junior hospital resident may be instructed to "inject nikethamide into the cord," by which it is intended that 0.5 to 1 ml. of nikethamide shall be injected into the umbilical vein and milked down the cord to the umbilicus. The operator, unfamiliar with the appearance of the cord in states of shock, and anxious to discharge his duty rapidly, may select a vessel and puncture it with difficulty; whichever he selects will be wrong, for the vein is empty, transparent, and practically invisible and the injection will have been made into an artery.

### AMEBIASIS AND WORMINESS AND THEIR CURE

MANY CASES of disability due to these parasites go unrecognized as to cause. What an authority<sup>1</sup> says is condensed for this page.

Probably 5 to 15 per cent of veterans who served in the Pacific Theaters are infected with *Entamoeba histolytica*. Emetine is used in daily doses of 0.06 Gm. for four to seven days in severe or moderate amebic colitis; for seven to 10 days in amebic hepatitis or abscess, granuloma of the colon, pulmonary, brain or skin involvement. A similar course may be needed after the lapse of 10 days, but some thought should be paid to possibly severe toxic reactions before a third course is given. Emetine was extensively used in the American military forces on their usual duties including aircraft operation, without a death from emetine reported during World War II. Iodo-Quinolines (chiniofon and diodoquin are two) have gained widespread acceptance in the treatment of amebiasis. Diodoquin is more effective, produces less diarrhea. Total daily doses of 3 grams by mouth for 20 to 30 days and longer, or several courses may be necessary. Cure rates from these drugs are said to be 80 to 95 per cent.

The treatment of ascariis with hexylresorcinol and pinworm with gentian violet is on the whole satisfactory. Tetrachlorethylene has been the choice in the treatment of hookworm infections.

In strongyloides infestation, three daily doses of 60 mg. each of gentian violet, increasing each dose by one pill each day until the maximum number

<sup>1</sup> Harry Most, New York, in *Bull. N. Y. Acad. of Med.*, Nov.

<sup>1</sup> W. G. Mills, Birmingham, in *British Med. Jl.*, Aug. 27th.

tolerated—usually 12 to 16 per day—taken for about two weeks, produces a satisfactory result in a high proportion of cases. Trichurias rarely produces disease or symptoms; treatment is unsatisfactory.

No drug treatment of trichinosis can be rationally aimed at destruction or removal of the parasite.

Filariasis, no longer a problem in the United States, occurred in several thousand members of our military forces; almost all were mild, and are no longer clinically or otherwise detectable. Whether later on any of these men may develop elephantiasis or other sequelae of filariasis no one can say.

In beef tapeworm, *Taenia saginata* infestations, if eight grams of fresh oleoresin of aspidium is introduced into the duodenum by tube together with 30 to 45 grams of sodium sulfate and 100 c.c. of water, cure will result in at least 90 per cent. Preliminary purgation and a low residue diet for 24 hours previously and treatment in the fasting state facilitate recovery of the head if it is passed. Even if the head is not found, there is no need for re-treatment before six to 12 weeks, or until segments are again noted in the stools.

Of infestation with trematodes or flukes, that with *S. japonicum* is best treated with faudin intramuscularly, in 5.0 c.c. doses daily, or as closely spaced as possible until 100 c.c. are given. Stool examinations should be started a month after completion of therapy and continued weekly for at least six months using techniques specially devised for discovering schistosome eggs.

#### MAINTAINING IMMUNITY THROUGH INFANCY AND CHILDHOOD

(H. R. Owen, in *Penn. Med. J.*, 52:493, 1949)

To determine duration of immunity to diphtheria a Schick test survey was made of Philadelphia school children.

As a result of this study, a program of immunization against diphtheria, tetanus and whooping cough was evolved. Basic immunization, using triple antigen is started at four to six months of age, and completed by the end of the first year. Four to six months later a booster dose of triple antigen is given. This completes immunization against these diseases. If basic immunization is given in infancy, a booster dose of diphtheria toxoid should be administered on admission to school, and a booster dose of tetanus toxoid one to two months after the diphtheria toxoid.

If basic immunization has not been accomplished in the pre-school period, two doses of diphtheria toxoid should be given one month apart on admission to school. Triple antigen is not recommended for children over five years of age because of the possibility of constitutional reaction. Second booster doses of diphtheria and tetanus toxoid should be given four years after the first booster to insure continued immunity.

Schick-testing programs are not essential if this program of immunization is utilized. Periodic sampling of substantial numbers of pupils will give sufficient information for evaluating efficacy of this routine.

#### MANAGEMENT OF PATIENTS WITH TETANUS (H. E. Godman & John Adriani, New Orleans, in *Jl. A. M. A.*, Nov. 12th)

Recently we have used a preparation of mephenesin called *tolserol*, a curare-like compound 250-mg. tablet for oral administration. In all except the exceedingly mild cases a stomach tube was kept in place for feeding. Eight patients with tetanus have been seen so treated; ages were from 22 months to 68 years. Each received also phenobarbital— $\frac{1}{2}$  to 2 grains, once, twice or three times daily. Mephenesin was given, 62.5 to 750 mg. in children up to 3,500 mg. in the one adult patient, as often as q. 2 h. In the first case in which mephenesin was used—one of especially severity—the drug was either ineffective or produced severe respiratory depression, and tribromoethanol was substituted. After a stormy course the patient recovered.

The combination of phenobarbital and *tolserol* controls the muscular rigidity and spasm in moderately severe cases of tetanus.

All cases of tetanus require constant attendance and careful observation. The course of the disease may change abruptly at any moment.

In all cases of tetanus, except those so mild as to make the diagnosis questionable, early tracheotomy should be performed.

It is essential to control rigidity and spasm of muscle. Of the many agents used, none has proved entirely satisfactory.

#### SOME OF OSLER'S MAXIMS

(Frederick Stenn, Chicago, in *Ill. Med. J.*, Oct.)

Acquire early the art of detachment by which I mean the faculty of isolating yourselves from the pursuits and pleasures incident to youth.

Good humor, a breezy cheerfulness—helps enormously both in the study and the practice of medicine.

The cultivated general practitioner. May this be the destiny of a large majority of you! Have no higher ambition! You cannot reach any better position in a community; the family doctor is the man behind the gun, who does our effective work.

#### THE USE OF A COLINERGIC AGENT IN DIAGNOSING BORDERLINE CARDIAC DISEASE

(I. E. Buff, Charleston, in *W. Va. Med. J.*, Jan.)

There are today many thousands of persons who have been told they are suffering from cardiac disorders, only because their eeg. tracing did not fit into the textbook pattern of normality. Simple tachycardia can produce electrocardiographic changes which may be interpreted as being due to organic cardiac changes.

The subcutaneous administration of 1.0 mg. Prostigmin Methylsulfate frequently reduces the heart rate and eliminates the eeg. abnormalities.

An urgent plea is made that in borderline cases a second electrocardiogram be obtained after the administration of Prostigmin Methylsulfate in order to avoid an incorrect diagnosis of cardiac disease which might produce cardiac cripples.

THE STUDY OF TWINS is of great value in providing information concerning the respective importance of hereditary predisposition and environmental influences in diseases in man. The results of the use of this method have shown hereditary predisposition to tuberculosis, diabetes and tumor-formation; and a high, medium, or low intelligence quotient. There is some a priori evidence showing a hereditary predisposition for peptic ulcer.

—A. C. Ivy, Chicago, in *Penn. Med. J.*, Sept.

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# "ORGANIZED" DOCTORS' "REASONING" ON ECONOMICS JUST LIKE THAT OF TRUMAN AND HIS GANG

TRUMAN and his gang say our country and small-town people are getting poor health care. The A. M. A. and every State Medical Society say the same thing.

It is not true. It is the opposite of true. The fact is our country and small-town people are getting better care than our city people. Proof is afforded by testimony of every State Board of Health in the country that the sickness and death rates are lower for the people in the country and the small towns.

Truman and his gang and doctors' organizations both say there is a crying need for more hospital beds. The records—compiled, mind you, by doctors who are joining in the clamor for more hospital beds—say that folks live longer in counties having no hospitals.

Truman and his gang admit that the National Government is spending beyond its income, and say the thing to do is to increase the already unbearable taxation.

Organized doctors admit that health care is costing the great majority more than they can pay without great hardship, and say the thing to do is to increase the cost by the people taxing themselves with the purchase of hospital insurance.

To neither of these two groups of great minds does it occur to consider reducing the cost—in the one instance, of government, by discharging superfluous personnel; in the other instance, of health care, by doing away with superfluous examinations and hospital services.

Our people are mad on the subject of insurance. A few of them comprehend that when the Government at Washington "grants" us a million dollars, it is only handing back money that has been taxed from us and heavily discounted in the "handling." But only a few of us "mossbacks" see that an insurance company can hand you back only what you handed to it, and that heavily discounted.

Every year I am sent a copy of the Proceedings of The Meeting of the Association of Life Insurance Company Presidents. The report of 1948, the last to be compiled, gives the average overhead expense as 17 per cent. Obviously, that item alone considered, you are paying for \$100.00 insurance, and getting only \$81.00 of insurance. There are many other items, e.g., the taking out of \$100,000 insurance, paying a few premiums, then committing suicide, which reduces that \$81.00 materially.

Any one who is informed on the subject, and is candid, will tell you that only 55 to 60 cents out of every dollar paid for insurance against losses



from fire is ultimately paid back to cover such losses. And everybody knows that a large percentage of this is to cover losses from fires that were either deliberately set or were "allowed" to occur.

Further, this takes no account of interest on the premiums from the time they were paid in until paid back when the insured property was burned.

The latest statement from the company selling most hospital insurance in North Carolina shows an overhead expense of 20 per cent. Further, everybody knows that persons who pay for this kind of insurance go to hospitals for treatment they would have in their homes or their doctors' offices if they were not paying for such insurance. Any doctor of experience can cite numbers of instances to bear this out. Many buy such insurance with full intent to mulct the company, otherwise the rest of the policy-holders. Some years ago a young doctor of medicine asked me if I had hospital insurance. I told him, no; that I paid for *needed* hospital care for my own family, not for the families of others. He said hospital insurance had paid the expense incident to the birth of his two children, and that "we are going to have one more child, then stop having children, and drop hospital insurance." This doctor's wife has several hundred thousand dollars in her own right.

To say people of moderate income who can not, as individuals, pay for needed hospital care, can as groups pay for needed and unneeded hospital care, plus 20 per cent operating expense, is as absurd as the old gag: "I lose three dollars on every one of these suits I sell; but I sell so many of em dat I make money."

Many a time have I heard my father propound to other business men this question: "Since each year a larger and larger fraction of the whole of the property of this country is owned by insurance companies, how long will it be before insurance companies own it all?" "Even to this day I have never heard an answer.

Organized doctors admit that health care, in and out of hospitals, costs too much. They say the Government at Washington costs too much. They say Mr. Truman (what an ironic misnomer) should demand that the expense of government be reduced by cutting out unnecessary expense, while themselves refusing to consider that sensible way of reducing the cost of medical care.

"The way is so plain. . . . (Look up the rest of it, those of you who are unfamiliar with the King James Version.

Cease to teach people that there is magic in the touch of a specialist, or in being put in a hospital bed.

Teach them that they are better off in the hands of their family doctor, in his office or in their homes, in 90 per cent of their illnesses, than anywhere else on earth.

Teach them to trust their family doctors to decide when to consult a specialist, and what specialist to consult, in the other 10 per cent of cases.

Teach specialists and all others to make expensive examinations and put patients in hospital beds, in such cases *only* as good doctors when they become patients will *pay* for such examinations and for hospital care.

For many years I have been keeping records covering a very interesting point—where doctors die.

It will be surprising to those who have not paid attention to the matter, how few doctors die in hospital.

### THE DISCARDED STRING TEST PROVES OF VALUE COMPARABLE TO THAT OF X-RAY EXAMINATION IN PEPTIC ULCER

SO FREQUENTLY do the x-ray reports read: "Duodenal deformity, probably due to ulcer, activity undetermined," that two doctors in a Veterans hospital resurrected a test held valuable two-score years ago, and applied it with happy results.

These doctors cite an experience of the Mayo Clinic as evidence that peptic ulcer is not so common as is generally alleged. A review of 15,000 patients with chronic dyspepsia examined at Rochester, found only 18 per cent to be due to gross organic disease of the stomach and duodenum; and the most common diagnostic error in the series to be the overlooking of duodenal ulcer, which occurred in 39 cases proven by subsequent examination.

It is well recognized that duodenal ulcer represents at least 80 per cent of peptic ulceration. Definite x-ray visualization of duodenal ulcer, with niche demonstration, occurs in less than two-thirds of cases of active ulceration, and at least 10 per cent of active ulcers give no definite diagnostic findings by x-ray. In the remainder of the cases one must rely on secondary non-specific signs, such as localized tenderness and deformity of the bulb, without niche visualization, to confirm the clinical impression.

The string test, introduced by Einhorn in 1909 in an effort to find objective evidence of activity of a peptic ulcer, was one of the accepted methods of demonstrating a peptic ulcer in the years prior to the x-ray examination. The patient swallows a thread, which remains in the stomach and duodenum overnight. An ulcerative lesion will produce a dark brown stain on the thread. It must be stressed that the test is non-specific, and that any lesion in the stomach or duodenum which oozes blood may give a positive test.

T. Eppum & G. Winn, in *Okla. Med. J.*  
From the Department of Medicine and Surgery, Oklahoma V.  
A. Hospital, Oklahoma City.



During the recent war one of the joint authors (T. B.) was stationed with an evacuation hospital where gastrointestinal x-ray examination was not available. Their report shows results with the string "at least as good as a single gastrointestinal x-ray study." It has also shown that the use of a larger cotton string is superior to silk, in showing the brown (blood) stain of duodenal ulceration caudad to the bile stain.

The patient swallows 36 inches of a Number 14 or 16 ordinary cotton twine, and retains it overnight, with the proximal end taped to his cheek. The patient may continue his ordinary feedings and medication, which do not interfere with the test. If the string is not rejected, and no marked obstruction is present, it will be carried through the pyloric ring. This will be verified by finding the distal few inches of the string bile-stained on removal. If duodenal ulceration exists, there will appear a dark brownish-red discoloration either at the upper end of the bile stain or within two inches of this stain. A stain appearing above this level is considered to be due to gastric or esophageal ulceration, depending on how far above. Usually a bleached area of string is noted in that portion which lay within the stomach.

The string may be left in place for from two to four days with no ill effects and no appreciable difference in the results. The dark brown discolorations have consistently shown a positive benzidine test, whereas negative strings do not.

In only two instances of positive string tests and repeated negative x-ray examination was medical management of the dyspeptic complaint a complete failure.

An old test originally described in 1909 has been largely discarded by being overshadowed by the development of the x-ray. The procedure has been found to be an invaluable addition to the armamentarium in diagnosing and in determining activity in peptic ulceration.

The test has been compared with x-ray results 114 times in 100 admissions to the hospital. In 72.3 per cent of the comparisons the results have been the same. In this series the string test was found to be a more reliable guide, both in the diagnosis and determination of activity, than a single x-ray series.

This test has great advantages; as a screening test to determine who should be x-rayed; when the clinical and x-ray findings are not in agreement; when the doctor in charge wishes to do as he would be done by—utilize inexpensive methods first, then go on to expensive methods in the cases in which the inexpensive methods have not yielded as much information as can be reasonably expected from the expensive.

#### THE TRI-STATE MEDICAL ASSOCIATION HOLDS FIFTY-SECOND ANNUAL MEET NEXT MONTH

THIS ASSOCIATION was initiated at the meeting of the Medical Society of the State of North Carolina held in May, 1897. Organization was effected at the meeting of the Medical Society of Virginia held in October, 1898. The first meeting with a regular program was held at Charlotte in February, 1899, under the presidency of Dr. J. W. W. Cobb, of Goldsboro, father of Dr. Donnell Cobb. A distinguished member to participate in that Charlotte meeting was Dr. Hunter McGuire, of Richmond, Surgeon to Stonewall Jackson's Corps, C. S. A., and father of Dr. Stuart McGuire. Another was Dr. Paul Barringer, Dean of the School of Medicine of the University of Virginia, a native of Cabarrus County, North Carolina. From Charleston came that learned specialist, Dr. C. W. Kollock. And there were many other stalwarts to start the new Association off on its course of high usefulness it has pursued for more than a half-century.

It has been twenty-four years since the Tri-State Medical Association has held a meeting at Fayetteville. The president then was that skillful surgeon and profound scholar, Dr. W. Lowndes Peple. But lately returned from a distinguished career abroad in World War I, Dr. Peple held us in thrall with his masterful handling of the subject, "J'Accuse La Guerre."

Dr. Peple is gone from among us, as are Dr. J. A. White, Dr. Beverley R. Tucker, Dr. Murat Willis, Dr. Cyrus Thompson, Dr. A. J. Crowell, Dr. Robert Wilson, Dr. James K. Hall, and many another who gathered with us then at Fayetteville.

For the 1950 Fayetteville meeting Dr. R. B. Davis and his committee have built a program such as no physician and surgeon, or physician, or surgeon can afford to miss.

The final program now in the hands of the members will have told everybody the attractive details.

Everybody come; bring your wives; bring your doctor friends of long standing; bring young doctors who have come lately into your neighborhoods.

#### DIHYDROSTREPTOMYCIN

1. J. H. Semans, Atlanta, in *Jl. Med. Assn. Ga.*, Nov.

THE INTRODUCTION of streptomycin and dihydrostreptomycin implies a new responsibility for the urologist and the general practitioner. Urinary infection not controlled by other bactericides responded to these two antibiotics. These arresting sentences open Seman's vigorous presentation of the case for these two almost new drugs.<sup>1</sup> Therapeutic failures will usually be explained on the basis of undiagnosed calculi or obstruction, undrained pus, drug-resistant bacteria, or the unjustified risk of toxic reaction with continued treatment.

Formerly infection of the urinary tract was treated by nonspecific antiseptics, after the elimination of stone and urinary stasis. Today, as before, the removal of stone and obstruction is essential. The new departure is the necessity for prompt and adequate use of the appropriate antibiotic.

Proper medication depends upon identification of the bacteria in the urine. Then, only the drugs effective against the organism need be tried. Since these infections are frequently managed in general practice, diagnostic technics must be suitable to office practice.

Where laboratory facilities are available, the bacteria causing the infection can be identified by culture of the urine. The effect on the growth of the organism in culture media which contain increasing concentrations of dihydrostreptomycin can thus be determined. In most cases this is not essential.

The office procedure of preparing a Gram stain of the sediment of centrifuged urine is applicable to general practice. The specimen from the male is voided. A catheter specimen from the female is essential. The identification of Gram-negative bacilli, sulfonamides having been ineffective, is an indication for giving dihydrostreptomycin.

The Gram stain used routinely in patients known to have had urinary tract infection will often demonstrate the organism before pyuria and debilitating symptoms occur. Early treatment, in these instances, may prevent the clinical attack.

The dosage of dihydrostreptomycin  $\frac{1}{2}$  gram q. 12 hr., for five to seven days, was considered sufficient for most infections caused by Gram-negative bacilli. *B. pyocyaneus* probably requires twice this dosage from the first day of treatment. Toxic reactions are not to be expected with this dosage. Pre-existing renal damage may hasten the onset of toxicity because of slow excretion of the drug in the urine and its rapid accumulation in the tissues.

It was frequently necessary that the patient give the injection himself, intramuscularly.

Drug fastness, though frequent, is not inevitable. One patient with bacilluria did not develop resistance even after four courses of dihydrostreptomycin.

Dihydrostreptomycin is less toxic than streptomycin, and is a new and important addition to the treatment of urinary tract infection.

#### TREATMENT OF MIGRAINE AND OTHER HEADACHES WITH CAFERGONE

WHITELAW's<sup>1</sup> experience is that the effect of oral ergotamine tartrate on the cerebral vascular bed is enhanced by the action of caffeine, this drug having the double advantage of relieving, or cutting down to a minimum, some of the toxic effects which have been observed when ergotamine tartrate was

employed alone. From results in his hands there is reason to believe that Cafergone is superior to oral ergotamine tartrate, more convenient than parenteral ergotamine tartrate and almost as efficacious.

Cafergone was effective in the treatment of migraine and tension headaches in 84 cases, when taken early in the attack. During a full-blown attack, Gynergen or DHE-45 parenterally, is the drug of choice, for more rapid effect.

Cafergone promises to be a most effective agent for the oral treatment of vascular headache and is worthy of further investigation in other types of headache.

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#### BLOOD—From P. 15

The amount of blood given the usual adult patient being treated for anemia is 500 c.c. In extremely young infants, a convenient rule is 5 c.c. per pound of body weight. Transfusion rate should be such that the entire transfusion is given in 25 to 30 min.

The patient should be constantly observed for any indication that a reaction may be developing, or at least he should be under sufficiently close observation that a physician may be called to his bedside if there is any untoward signs or symptoms. Mild to severe reactions of some types are seen in 6 per cent of blood transfusions, whether of stored blood or fresh citrated blood.

Groups of patients who should receive only Rh-negative blood are:

All Rh-negative patients, male or female, who are to receive repeated transfusions.

All Rh-negative females.

Pregnant Rh-negative women.

Infants who are suffering from hemolytic disease of the newborn, or erythroblastosis fetalis.

Plasma is available in the original liquid state, frozen or dried. Dried plasma has the widest use.

In hemorrhage whole blood is better, but plasma is useful to replace blood volume if whole blood is not available and if the patient requires immediate treatment. In cases of burns, plasma is the choice because it replaces the proteins. In the early stages of treatment of burns, 2,000 to 3,000 c.c. may be required in the first 24 hours.

In the crush syndrome plasma is the choice.

In cases of shock with cerebral damage the choice is concentrated plasma—one-fourth or one-half as much as usual of the diluent to dissolve the dried plasma.

In conditions in which there is not anemia but loss of protein, the use of plasma is preferred.

Concentrated suspensions of red cells made by removing the plasma (discarding it or storing it) and then resuspending the cells in half the original volume of salt solution has special usefulness in severe cases of aplastic anemia and certain cases of poisoning.

1. M. J. Whitelaw, Phoenix, in *Arizona Med.*, Dec.

## NEWS

### THE FIRST ANNUAL FRANK HILTON McLEOD MEMORIAL SCIENTIFIC ASSEMBLY

In memory of the founder of the institution, the Staff of the McLeod Infirmary presented a clinic of scientific discussion on December 15th.

The afternoon session was held at Florence Public Library. Presiding—Dr. O. T. Finkla.

Program—3:00 to 5:30 p. m.

Dermatological Problems in Everyday Practice, Dr. George Smith.

The Problem of Vertigo in Private Practice, Dr. Gordon H. Bobbett.

Pyuria—Its Significance and Treatment, Dr. Eugene Guyton.

The Care of the Premature Baby, Dr. Walter Moore Hart.

Pre-Natal Care of the Pregnant Woman, Dr. Roland Zeigler.

Clinical-Pathological Conference, Drs. Walter R. Mead and Joseph McMeans.

6:30 p. m.—Social Hour

The evening session was held at Florence Country Club.

7:00 p. m.—Banquet

Program—Dr. P. D. Hay presiding

What Chest Surgery Has to Offer the General Practitioner, Dr. Henry Rigdon.

Dr. Frank Hilton McLeod—Pioneer in Medicine, Dr. M. R. Mobley.

### TWO SCOTLAND COUNTY SURGEONS LICENTIATES OF THE AMERICAN BOARD OF SURGERY

Dr. Jas. J. Richardson, associate surgeon at the Scotland County Memorial Hospital, last summer was made a member of the American College of Surgeons and now the American Board of Surgery adds its stamp of approval.

Dr. Richardson went to Laurinburg and its new hospital in 1946, and rapidly made a place for himself in the community and in high professional standing among his fellows in the profession. He is a graduate of the University of Florida and of Temple University's School of Medicine, Philadelphia, was intern and later resident surgeon at Lankenau Hospital, Philadelphia. It was from this latter post that he came to the Scotland County Memorial Hospital in 1946.

Dr. Simmons Patterson, who came to the new hospital as chief surgeon when it first opened its doors in September, 1946, received the American Board of Surgery's accolade some years ago.

### SCOTLAND COUNTY (N. C.) MEDICAL SOCIETY

New officers for 1950 were elected by the Scotland County Medical Society at a recent meeting in Laurinburg. Dr. Edwin C. Womble, Wagram, president to succeed Dr. F. M. Simmons Patterson, Laurinburg; Dr. Gus Forbes, Laurinburg, vice-president; Dr. L. E. Nesmith, Laurinburg, second vice-president; Dr. Patterson, secretary; and Dr. John Larson, Laurinburg, treasurer.

The society named Dr. James J. Richardson, Laurinburg, delegate to the annual meeting of the State Medical Society at Pinehurst next year.

The doctors took no action in respect to the assessment of \$25 per member by the American Medical Association for a fund to combat socialized medicine.

DR. JOHN L. RANSON, JR., WITH DR. ELIAS B. FAISON

Dr. John L. Ranson, Jr., has formed an association with Dr. Elias S. Faison in the practice of internal medicine in Charlotte.

A graduate of Davidson College, Dr. Ranson studied medicine for two years at the University of North Carolina Medical School and was graduated from Jefferson Medical College. His internship was served at Protestant Episcopal Hospital, Philadelphia. During the war he served as a medical officer with the 88th division in Italy, attaining the rank of major. His residencies include six months at Charlotte Memorial Hospital and 2½ years at Lakeside Hospital, Western Reserve University, Cleveland.

### MEDICAL COLLEGE OF VIRGINIA

Dr. John Louis Parks, Professor of Obstetrics and Gynecology, George Washington University School of Medicine, Washington, delivered the ninth annual Phi Beta Pi lecture at the College this year. Dr. Parks discussed "Diagnosis and Treatment of Placenta Praevia." The lecture was given January 6th at 4 p. m. in Baruch Auditorium.

Dr. Johan Holst, Professor of Surgery, University of Oslo, Norway, lectured on "Surgical Treatment of Pulmonary Tuberculosis" in Baruch Auditorium November 21st at 4 p. m. Dr. Holst is surgeon-in-chief, Rikshospital, Oslo, and has held the chair of surgery in the University for 30 years. He was brought to the College by the Phi Delta Epsilon Medical Fraternity to give the second of their annual lectures.

THE NALLE CLINIC announces the addition of a Department of Orthopedic Surgery under Dr. Alfred R. Berkeley, Jr., lately instructor in Orthopedics at the University of Virginia.

### NALLE CLINIC ADOS SERVICE

The Nalle Clinic, Charlotte, has added a department of orthopedic surgery with Dr. Alfred R. Berkeley, Jr., as its head.

Dr. Berkeley was graduated from Episcopal High School, Alexandria, Va., received his A.B. degree at the University of Virginia and in 1942 his M.D. at the same school.

Following graduation he interned at Union Memorial Hospital in Baltimore.

After three and one-half years in the Army, serving in the European Theater and at Lawson General Hospital, Atlanta, Dr. Berkeley served as resident in orthopedic surgery at the University of Virginia Hospital and at New York State Rehabilitation Hospital. He came to Charlotte from a position as instructor in orthopedic surgery at the University of Virginia.

DR. HOWARD T. HOLDEN announces the re-opening of offices for the practice of Ophthalmology and Otolaryngology at 214 N. Torrence Street, Charlotte, N. C.

### DR. BAXLEY CHIEF SURGEON

Dr. Raiford D. Baxley, of Wagram and Durham, has accepted an appointment as chief surgeon of the new Chatham County Hospital at Siler City. The new 75-bed hospital is now in its later stage of construction and is to be completed in March. Dr. Baxley will assume his new duties April 1st.

Dr. Baxley is at this time associated with Dr. W. B. McCutcheon in the practice of general surgery at Durham. His family lives at Wagram, his old home town.

Dr. Baxley is a graduate of the University of North Carolina where he got the first two years of his medical training. He completed his medical education at Rush Medical College, Chicago, and at the Taylor Hospital at Washing-



ton, N. C., where he began surgery under Dr. Josh Tayloe. He interned at the Henry Grady Hospital, Atlanta. For 38 months Dr. Baxley was in the Army Air Force Medical Corps and was sent overseas 12 days after he enlisted and was stationed in Africa and Asia during his overseas service in World War II.

After his discharge from the service, Dr. Baxley studied orthopedics at Camp Butler and then was resident surgeon at Watts Hospital in Durham for two years.

#### UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE

Under the auspices of the Postgraduate Program for House Officers, the following guest speakers have presented lectures to the faculty and student body:

On September 26th, Dr. W. L. Pressly, of Due West, S. C., recipient of the A. M. A. General Practitioner's Award, discussed "General Practice as a Medical Specialty."

On October 3rd, Dr. Louis K. Diamond, Harvard Medical School, spoke on the subject, "Present and Future Uses of Blood and Blood Derivatives in Modern Therapeutics."

On October 17th, Dr. C. N. H. Long (Dean of Medicine, Yale University), gave a lecture entitled "Recent Advances in Physiology and Biochemistry Which Bear Upon the Problem of Clinical Diabetes Mellitus."

On October 24th, Dr. Reginald Fitz, Assistant Dean of Medicine, Harvard Medical School, spoke on the subject, "Birdseye View of Medical Education."

On October 31st, Dr. F. C. Robbins, Children's Medical Center, Harvard University, gave a lecture entitled "In Vitro Cultivation of Poliomyelitis Viruses."

On November 21st, Dr. Daniel Blain, of Washington, spoke on the subject, "What is Psychosomatic Medicine?"

On November 28th, Dr. Richard W. TeLinde, of the Johns Hopkins Hospital, discussed "Present Day Status of Early Diagnosis and Treatment of Cancer of the Cervix."

On December 12th, Dr. George T. Pack, of New York, spoke on the subject, "Tumors of the Soft Somatic Tissues."

On December 5th, Alpha Omega Alpha, National Honorary Medical Fraternity, presented as guest speaker, Dr. James Barrett Brown of St. Louis. Dr. Brown spoke on the subject, "Possibilities and Limitations in Plastic Surgery."

Dr. Philip Hench, Professor of Medicine, Mayo Foundation, spoke to the faculty and student body on the subject, "Compound E," November 2nd.

At the recent meeting of the Southern Surgical Association, Dr. W. Gayle Crutchfield, Professor of Neurosurgery, was elected first Vice-President.

#### CARTERET COUNTY MEDICAL SOCIETY MEETING

The Carteret County Medical Society held its regular monthly meeting at the Morehead City Hospital December 12th.

The topics discussed were the hospital death rate, the importance of autopsies and the school health tonsil clinics established under appropriation by the last legislature for the correction of physical defects in underprivileged school children.

The school program in Carteret County seems to be working to the entire satisfaction of the Medical Society, the Health Department and the school system.

At the conclusion of the program the society elected officers for the coming year. Dr. S. W. Hatcher, Morehead City, succeeding Dr. F. E. Hyde, Beaufort, as president and Dr. C. S. Maxwell, Beaufort, succeeding Dr. S. W. Hatcher as secretary.

Reported by N. Thos. Ennett, M.D.,  
Corresponding Secretary.

MECKLENBURG COUNTY MEDICAL SOCIETY, Tuesday, December 6th, Mint Museum, 8 P. M.

Program: 1. Diagnosis and Treatment of Trichomoniasis Vaginalis, Dr. Robert Thrift Ferguson.

2. Annual Business Meeting;

Officers for 1950: President, Dr. Roy B. McKnight; first vice-president, Dr. T. Preston White; second vice-president, Dr. E. K. McLean; secretary (re-elected), Dr. John H. E. Woltz.

#### DIED

Dr. A. Wylie Moore, 71, prominent Charlotte surgeon, died January 13th. Burial was in Chester, where Wylies and Moores had made their homes for many generations.

Mr. Moore was a graduate of Virginia Military Institute, and of the medical schools of the University of Virginia and Bellevue.

Dr. Moore is survived by one brother, Dr. Baxter Springs Moore, of Fayetteville, and by several nieces and nephews. He made his home with his niece, Miss Carolina Moore, at his residence on Cumberland avenue.

Mr. Moore is credited with having employed the "early ambulation" post-surgical technique here 43 years ago, long before the get-up-and-walk methods became generally accepted.

Dr. Joseph Berry Greene, Asheville, N. C., was born in Birmingham, October 18th, 1869, graduated from the University of Virginia Department of Medicine in 1893. He was a past president of the Buncombe County Medical Society; member of the American Medical Association, the American Academy of Ophthalmology and Otolaryngology; member and at one time vice-president of the American Laryngological Association; the American Laryngological, Rhinological and Otolological Society; fellow of the American College of Surgeons; Sculicist Certified by American Board of Otolaryngology; veteran of the Spanish-American War and World War I; served on the staffs of the Western North Carolina Sanatorium, Black Mountain, Asheville Mission, Biltmore, St. Joseph's and Aston Park hospitals. He died October 10th, aged 79, of arteriosclerosis and hypertension.

Dr. Thomas Poindexter West, 75, a retired physician, active in civic and fraternal life, died at his home at Bedford, Va., November 6th. Before retiring several years ago, he had completed 50 years as a general practitioner.

Dr. West was a graduate of the Medical College of Virginia, in the class of 1897.

The past three winters he spent at Winter Garden, Fla., where he was associated with a brother, the late Sidney D. West, in the citrus fruit business.

#### WE COULD GET ALONG PRETTY WELL WITHOUT DIETITIANS (Editorial in R. I. Med. J., Dec.)

Both quantitatively and qualitatively the question of the ideal diet is still not conclusively decided. We have probably not paid sufficient attention to nor adequately studied the dietary habits of alien peoples, many of whom flourish on diets that we would consider bizarre and outlandish. The Esquimaux do well on a diet very high in protein and fat. We know little of the diets of many Oriental peoples: the Chinese, the Japanese, the inhabitants of India, Burma and Polynesia. It is obvious that much study of food and nutrition is still needed before we are on solid grounds as regards many aspects of this vital subject. Nor need we be much disturbed because the American public is being subjected to a barrage of dietetic misinformation by half-baked and poorly-balanced enthusiasts. In time such situations become adjusted.

## BOOKS

HANDBOOK OF MEDICAL MANAGEMENT, by MILTON CHATTON, A.B., M.D., Instructor in Medicine, University of California Medical School; SHIELDON MARGEN, A.B., M.D., Clinical Instructor in Medicine and Research Associate in Medicine, University of California Medical School; and HENRY D. BRAINERD, A.B., M.D., Assistant Clinical Professor of Medicine and Pediatrics, University of California Medical School; Assistant Clinical Professor of Pediatrics, Stanford University School of Medicine. *University Medical Publishers*, P. O. Box 761, Palo Alto, California. 1949. \$3.00.

The foreword is quoted with the hearty approval of this reviewer:

"When the diagnosis is established the clinician's first thought is to bring to bear the most effective therapeutic procedures at the earliest possible moment. He wants to know what to do first, how to use the chemical and other measures in order to relieve symptoms and to restore the normal physiological balance, remembering always that symptoms arise from a disturbance of some normal physiological mechanism."

That the book will meet admirably the purpose of supplying reliable directions for right now, allowing time for consulting more ample treatises later, seems a reasonable hope.

ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY, by ROBERT L. FAULKNER, M.D., F.A.C.S., Assistant Professor of Gynecology, The Western Reserve Medical School; and MARION DOUGLASS, M.D., Formerly Assistant Professor of Gynecology, The Western Reserve Medical School. With 300 illustrations including three color plates. Second edition. *The C. V. Mosby Company*, 3207 Washington Boulevard, St. Louis 3, Mo. 1949. \$8.75.

It seems that in the past 20 or 30 years there has been a gradual getting away from the concept that a good knowledge of pathology is essential to the making of a clinician, medical or surgical. The authors have become convinced that a textbook of obstetrical and gynecological pathology, not so voluminous and detailed as are most such books and putting more emphasis on clinical application, should be made available. The welcome accorded the first edition 10 years ago has justified this assumption and demanded a second edition, which, with the addition of the advancements in practice in this field is now to be had, and for it even greater popularity is predicted.

PSYCHOANALYSIS AND THE SOCIAL SCIENCES, Vol. 2. GEZA ROHEIM, Ph.D., Managing Editor, GERTRUDE M. KURTH, Ph.D., Assistant Editor. *International Universities Press, Inc.*, 227 West 13th Street, New York 11, N. Y. 1950. \$7.50.

The introduction discusses psychoanalysis and history. Part I is devoted to anthropology, Part II to esthetics, Part III to history, and Part IV to sociology.

The series of publications of which this book is one, appear under the aegis of a score of the most eminent psychiatrists of Europe, of South America, and of this country; so the reader may be well assured that the presentation here made of the various subjects is orthodox and authoritative.

PHYSIOLOGY OF HEAT REGULATION AND THE SCIENCE OF CLOTHING—Prepared at the Division of Medical Sciences, National Research Council. Edited by L. H. NEWBURGH, M.D., Professor of Clinical Investigation, the Medical School, University of Michigan. 457 pp. with 78 figs. and 38 tables. *W. B. Saunders Company*, W. Washington Square, Philadelphia. and London. 1949. \$7.50.

Wonder was experienced at first beholding the title of this book that so much of a book would be written and published on so limited a subject. How could author or publisher expect to, sell enough copies to meet the cost?, to say nothing of making a profit. The explanation came promptly on reading, just under the title, these words: "prepared at the request of the Division of Medical Sciences, National Research Council."

Among the 15 contributors may be found professors of physiology, pediatrics, pathology, sociology, and industrial hygiene; a "director, quarter-master climatic research;" a president of a research laboratory; a military geographer. Ph.D.'s, D.Sc.'s, M.S.'s and an M.C.E. are listed. Only two M.D.'s are credited with having any part in the authorship.

The editor's preface would have it that World War II was the first war in which fighting took place at any time of year, "regardless of intense cold and deep snow, sodden, half-frozen earth, burning desert sunshine, or humid tropical heat." Further: "for the first time . . . in this war . . . the seaman forced in the water could not expect to board a lifeboat."

If memory serves George Washington crossed the Delaware on Christmas night to attack the British; and to the reviewer's own knowledge, if the necessity had arisen for abandoning ship on his trip to France in World War I, he would have had to take to a raft with 11 others—not on the raft, but dangling in the water supported by a piece of rope run under his arms and fastened to a loop attached to the side of the raft. Wonder was expressed by all at the folly of providing rations for several days, as though a man could float around in icy water until he starved to death.

For those having a special desire for full information on the physiology of heat regulation and the science of clothing, this book doubtless will have appeal. Doctors generally, it may be assumed, will content themselves with the amount of information on the subject to be had from sections on heat production and regulation in standard books on physiology.

SCIENCE SINCE 1500: A Short History of Mathematics, Physics, Chemistry and Biology, by H. T. PLEDGE, B. A. *The Philosophical Library, Inc.*, 15 East 40th St., New York 16, N. Y. \$5.00.

The book is not intended to cover everything that its name would imply. It is intended as a background, to present in brief a history of modern science as a whole as published anywhere or at any time. An objective is to indicate from time to time where the reader should be strictly on his guard. The plates have been chosen to emphasize not so much major figures and aspects as those too much neglected. Especially attractive chapter heads are: biology before the microscope; astronomy before the telescope; evolution and the microscope; quantum theory; relativity and cosmology.

QUESTIONS MEDICAL STATE BOARD AND ANSWERS, by R. MAX GOEPP, M.D., Formerly Professor of Clinical Medicine, Graduate School of the University of Pennsylvania, and Professor of Medicine, Woman's Medical College of Pennsylvania; and HARRISON F. FLIPPIN, M.D., Associate Professor of Medicine at the Graduate School of the University of Pennsylvania. New, 8th edition. 663 pages. *W. B. Saunders Company*, W. Washington Square, Philadelphia 5, and London. 1950. \$7.00.

The name Goepf revived memory of former editions. The book has been extensively rewritten, covering important advances. It will serve well in making preparation for college and hospital examinations, and for examinations required by boards for admission to membership in the various specialties.

CLINICAL PATHOLOGY—Application and Interpretation, by BENJAMIN B. WELLS, M.D., Ph.D., Professor of Medicine, University of Arkansas School of Medicine, Little Rock, Arkansas. 397 pages with 32 figures. *W. B. Saunders Company*, W. Washington Square, Philadelphia 5, and London. 1950. \$6.00.

All physicians now in practice recognize the fact that the clinical laboratory, conducted by a thoroughly competent personnel, is essential to respectable medical practice. Most physicians maintain a small laboratory for the conduct of certain examinations that are routine, and utilize the facilities of more elaborately equipped laboratories as they are needed. Wells' books is not half as large as a lot of other texts on the subject, but it contains all that is known on this subject which can be used to the advantage of the patient.

ELECTROCARDIOGRAPHY—Fundamentals and Clinical Application, by LOUIS WOLFF, M.D., Visiting Physician. Consultant in Cardiology and Chief of the Electrocardiographic Laboratory, Beth Israel Hospital; Associate in Medicine, Harvard Medical School. 187 pages with 110 figures. *W. B. Saunders Company*, W. Washington Square, Philadelphia 5, and London. 1950. \$4.50.

Many years of teaching electrocardiography to undergraduate and graduate students of the Harvard Medical School has afforded the author the opportunity to keep fully abreast with, and make

valuable contributions to, the utilization of this method as an aid in diagnosis. This knowledge has been condensed into a book of less than 200 pages. The author is to be congratulated on this achievement. The book is heartily recommended as a source of full information on this important subject.

STORY AND VERSE FOR CHILDREN, Selected and edited by MIRIAM BLANTON HUBER, Ph.D., Decorations by BORIS ARTZYBASHEFF. *The Macmillan Company*, 60 Fifth Ave., New York City. \$4.50.

This book having arrived at its 12th printing demonstrates it to be a fact that the children of these times can be readily interested in the stories and verses that entertained and instructed their grandparents and their great, great grandparents, that they need only to be offered reading material which will be pleasing and improving to be diverted from the reading of the trash and worse that is being forced on them by the greed of publishers and the stupid acquiescence of the parents of the present time.

THE NATURAL BENT: The Memoirs of DR. PAUL B. BARRINGER, by ANNA BARRINGER. *The University of North Carolina Press*, Chapel Hill. 1949. \$3.50.

Paul Barringer was born in 1857 at Concord, N. C., in Harris' Hotel. In anticipation of the extra space needed for an addition to the family the

## EDGEWOOD

A Distinctive Southern Sanitarium Fully Equipped for Complete Diagnosis and Treatment of Nervous and Mental Disorders . . . in an Atmosphere of Congenial Friendliness and Quiet Charm.

Edgewood offers all approved therapeutic aids; complete bath departments; supervised individual physical rehabilitation programs. Living accommodations are private and comfortable. Recreational facilities excellent. Full time psychiatrists, adequate nurses and psychiatric aides assure individual care and treatment. More detailed information on request.

Psychiatrist-In-Chief

ORIN R. YOST, M.D.

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ORANGEBURG

SOUTH CAROLINA



roof of his parents' home was being raised one story. He died at his home at Charlottesville, Va., in 1941. Throughout his long life he was a remarkably happy and remarkably useful man. The account as given by his daughter, Anna, is entirely delightful, for what it says and for the manner of its saying.

The earliest recollection of the time of war and slavery, of the big houses and plantations of his kindred, of his impressions of President Jefferson Davis whom he saw at the home of his Uncle Victor when the President was retreating southward, of reconstruction time, of his father General Rufus Barringer C.S.A. and his imprisonment—these and many more subjects are delightfully dealt with in the first section of the book. Then come a recital of his experiences at Bingham's School, of the four musketeers—himself and three bosom-friends and few conspirators—of his schooling at Kenmore University School, at the University of Virginia, at the clinics at New York and of Vienna; and finally a postscript of 20 pages of intimate things about Dr. Barringer which sheds a penetrating light on the whole narrative.

Dr. Barringer was a great doctor, a great teacher, a great man. His was the greatest influence in the development of the Medical School of the University of Virginia into a great institution for clinical instruction. His was the greatest influence in developing the latent possibilities of the Virginia Polytechnic Institute. Every physician, every engineer, every farmer—indeed every person who loves a well-told tale of exceptional worth should read, enjoy and be instructed by this remarkable book about a remarkable man.

**YOUR NASAL SINUSES AND THEIR DISORDERS**, by ALBERT P. SELTZER, M.D., M.Sc., Sc.D. (Med.), F.A.C.S., F.I.C.S., Assistant Professor in Otolaryngology, Graduate School of Medicine, University of Pennsylvania. *Froben Press, Inc.*, 1776 Broadway, New York 19, N. Y. 1949. \$2.50.

During 25 years of seeing patients with nose-and-throat disorders the author has been impressed with the tendency of patients to make their own diagnosis of sinus trouble, and in many instances to decide on and carry out their own treatment. He has written a book to supply readers with some general facts about the nasal sinuses, the diagnosis of their diseases and suggestions as to treatment. The expressed intent is to serve the purpose of preventive rather than curative medicine.

A study is cited of a thousand cases in which the sinuses had been suspected to be the cause of the headache, and careful special examination showed that in only 118 of the number was there any sinus trouble, and in only 88 were the sinuses the sole cause of the headache. This observation shows that the author's attitude toward sinus trou-

ble is a conservative one, and it indicates that the whole exposition of the subject is conservative, and therefore valuable.

**FOR THE NEW MOTHER**, by MILDRED V. HARDCASTLE, R.N. Illustrated by SHIRLEY TATTERSFIELD. *The John C. Winston Company*, 1010 Arch St., Philadelphia 7, Pa. 1948. \$2.00.

Nurse Hardcastle has written a book for the guidance of the mother in caring for the baby from the first month to the first year—how to bathe and feed, what to do in an emergency. Many suggestions are made for the new mother as to the means of keeping herself calm and cheerful and in the best of health generally during this period.

**SCIENCE AT WAR**, by J. G. CROWTHER, Chairman, Association of British Science Writers, and R. WHIDDINGTON, C.B.E., F.R.S., Head, Department of Physics, University of Leeds. *Philosophical Library, Inc.*, 15 East 40th St., New York 16, N. Y. 1948. \$6.00.

This book, it is said, gives the first detailed account of science's contribution to the war effort, based on the official documents of the Scientific Advisory Committee of the British Cabinet. All the subjects are of especial interest: Radar, The Atomic Bomb, Operational Research, and Science and the Sea. Certainly every intelligent person will want to have all the information he can get on subjects of such importance to our future, even to our prospect of survival as a nation and as individuals.

**SURGICAL AND MAXILLOFACIAL PROSTHESIS**, by OSCAR EDWARD BADER. *King's Crown Press, Columbia University Press*, 2960 Broadway, New York 27, N. Y. 1949. \$3.00.

Maxillofacial prosthesis as used here is meant to cover the use of appliances as permanent substitutes. Credit is given the ancient Egyptians for having used gold to correct palatal defects. Some of the cases in which surgical and maxillofacial prostheses are indicated and listed as follows: fractures of one or both maxillary bones with displacement; resection of maxilla or mandible because of cancer, inoperable cleft palate; for instituting treatments of certain parts with radiation; as an assist in some cases of plastic surgery; and in some cases for cosmetic purposes.

The limited field appears to be covered satisfactorily.

**CLINICAL DIAGNOSIS BY LABORATORY EXAMINATIONS**, by JOHN A. KOLMER, M.S., M.D., Dr. P.H., LL.D., L.H.D., F.A.C.P., Professor of Medicine in the School of Medicine and the School of Dentistry of Temple University. Second edition. *Appleton-Century-Crofts, Inc.*, 35 West 32nd St., New York City, 1949. \$12.00.

The author's long practice in clinical pathology, followed by some dozen years as professor of medicine in one of our largest medical schools, qualify



him remarkably well for the writing of such a book as this. The first edition enjoyed such great popularity and usefulness as to necessitate this second edition, which represents very extensive revision and enlargement. The book is earnestly recommended to all medical men as a reliable book on diagnosis written with an unusual sense of comparative values of bedside and laboratory methods.

THE WET DRESSING IN ACUTE SKIN INFLAMMATION  
(F. C. Combes, New York, in *New York Physician & American Medicine*, Nov.)

By using a wet dressing we may accomplish the purposes designated as follows:

A. Physical action

1. Detergence
2. Heat dispersion (cooling)
3. Heat retention (poultice)

B. Chemical action

1. Antisepsis
2. Astringency
3. Buffer action

The wet compress, or wet dressing used for this purpose is effective only if properly applied. It must be kept wet. The water used, if not distilled should at least be sterile. The purpose being encouragement of evaporation, the quantity of dressing should be kept at a minimum so as to avoid retention of heat. The material should be soft; old washed muslin or linen, old handkerchiefs, sheets or pillow cases. Gauze is much too coarse and is irritating to the inflamed eroded skin; and absorbent cotton is contraindicated. Three or four layers are sufficient—no more; and no covering the compress with yards of bandage. In bed patients the "open method" may be used; in ambulatory patients the dressing may be made secure with a cord, thread, safety pin or a minimum amount of bandage. On the extremities a large cotton stocking serves the purpose admirably, as does a large cotton glove for the hands. Whatever is used should be readily removable.

As more solution is added the concentration increases due to evaporation of the solvent, and may be irritating. It may be advisable to add plain distilled or boiled water; or to change the dressing entirely several times daily. If the lesion is badly infected the latter course is preferred.

It is good to apply solutions cold or even iced, if the area is not very large. This reduces local temperature by vasoconstriction and relieves itching. If an ice bag is placed over a compress, leave it on and off for 15 minutes alternately.

Wet compresses must never be allowed to dry. More failures are due to neglect of this requirement than any other.

During hours of sleep it may be well to remove the dressing and apply an emollient cream, of the water-miscible type, such as Omnia cream.

Never use strong antiseptics in any wet dressing. Active chemotherapy of wounds is unnecessary and undesirable. Any apparent antiseptic benefits of a wet dressing are due to activation of local humeral and cellular defense mechanisms.

Never apply any impermeable substance over a compress.

On extensive areas, avoid chilling the patient. Do not cover more than a fifth of the cutaneous surface at one time. In the elderly and emaciated it is best to avoid this type of dressing on the chest and upper extremities (danger of pneumonia). Many patients do not tolerate wet compresses on the scalp. Oils are preferable.

For the wet dressing solutions of choice are:

Solutions of sodium chloride (C. P.) in strengths varying from 0.9 to 1.5 per cent are ideal but impracticable since seldom are means available to control or maintain a salt concentration within these limits. If the molecular strength of the solution exceeds 1.5 per cent, its tendency to dehydrate the tissue is impaired in that passage of sodium ions, into the tissues is accelerated with subsequent local irritation and intensification of the edema.

Boric acid bears the stigma of toxicity; and boron poisoning on absorption when it is applied to extensive denuded areas has been reported.

Burow's solution is an excellent medium for wet dressings but is not very stable and may prove irritating and astringent if not properly diluted.

These objections may be overcome by making use of Domeboro\* tablets or powders dissolved in ordinary tap water a buffered solution of aluminum acetate of correct dilution which is always fresh.

One indication for the use of cool, wet compresses which deserves special mention is in "over-treatment dermatitis." In acute and chronic contact dermatitis, acute seborrheic eczema and in dermatophytosis the average patient and his practitioner would accomplish more and avoid "over treatment dermatitis" by the use of mild, soothing dressings kept wet with Domeboro solution.

A freshly prepared, modernized Domeboro solution is one of the best for wet compresses in all instances of acute cutaneous inflammation, regardless of cause.

The use of Domeboro tablets and packets represents a modern, clean, fast, economical and convenient method of preparing a fresh, lead-free, non-irritating, antiphlogistic buffer solution of aluminum acetate with a therapeutic efficacy of 1:20 Burow's solution.

\*Dome Chemicals, Inc., 109 W. 64th St., New York 23, N. Y.

#### MEDICAL TREATMENT OF THYROTOXICOSIS

(H. M. Harevitz, Davenport, in *Jl. Iowa Med. Soc.*, Dec.)

Since the introduction of propylthiouracil many patients can be controlled by medical treatment alone. Surgery should be employed in the substernal thyroid, in all nodular goiters and in all instances where the patient is not sufficiently reliable to be kept under observation. This new group of drugs has not entirely replaced the use of iodine.

#### Muracil New Name for Antibason

Organon has changed the name of its brand of methyl thiouracil from Antibason to *Muracil*, this change to conform with the nomenclature of the Council on Pharmacy and Chemistry of the A. M. A., which body has just accepted *Muracil* as the first brand of methyl thiouracil for inclusion in New and Nonofficial Remedies.

*Muracil* (formerly Antibason) will continue to be available for physicians' prescriptions in 50-mg. tablets, bottles of 1000 and 100 tablets.

#### Schering Appoints Medical Service Head

The appointment of M. William Amster, M.D., as head of the Medical Service Department has been announced by Schering Corporation, Bloomfield, New Jersey.

Dr. Amster attended Columbia University and received his B.A. degree from George Washington University in 1929. Continuing his studies at the same university's School of Medicine, in 1932 received his M.D. degree. After several years in private practice he entered the Army as Flight Surgeon, attaining the rank of Lieutenant Colonel as Assistant Surgeon of the Fifth Air Force. In 1946 Dr. Amster joined Schering as assistant to the head of the Medical Service Department. He is succeeding Dr. Norman L. Hemmings, who is now Associate Director of Schering's Clinical Research Division.

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# THE JOURNAL OF SOUTHERN MEDICINE AND SURGERY

306 NORTH TRYON STREET, CHARLOTTE, N. C.

*The Journal assumes no responsibility for the authenticity of opinion or statement made by authors, or in communications submitted to this Journal for publication.*



JAMES M. NORTINGTON, M.D., Editor

VOL. CXII

FEBRUARY, 1950

No. 2

## A Year of Symptoms, A Life Ended

DR. ELEANOR BEAMER-MAXWELL, Williamsburg, Virginia

THIS CASE is presented as a diagnostic problem which is not yet solved. The presentation is in a manner a little different from the usual, that is, in the way in which we received the problem. I do this in order to ask your cooperation whenever you have occasion to send a patient to a State Hospital. We have a Social Service Department that obtains histories and information for us. But if we can get helpful information on the commitment paper it speeds up our diagnosis and plans for treatment.

Th's patient was brought to us by the Chief of Police of the patient's home town. He did not know her mental condition, so all the information we had was that given by the physicians who signed her papers. They told us that she was 57 years of age, and that they considered her insane.

We use form interrogatories for obtaining information on the patients' social history; *i.e.*, concerning the extent of their education, social adjustment, and developmental and environmental factors that might be of interest. Under this heading the report was that: She finished high school, was happily married, but husband died. Married her present husband about 20 years ago and has apparently gotten on satisfactorily up until the past year. No previous indication of mental disease. The next heading on the paper asks about family history of physical diseases, particularly syphilis, tuberculosis, etc. Under this is the statement, "No physical

disease other than anemia." Under patient history of physical disease *prior to present illness*, we are told that she had: "Usual childhood diseases. Has consulted eye specialists regarding poor vision. Has never had any children. Has never been pregnant. Her family physician states she is in good physical condition." Physical diseases or symptoms of the patient *at this time* are "general health good."

They state, "No member of family has any mental disease. . . . Patient was normal mentally up until six months ago. Had appendix removed in Leigh Memorial Hospital, Norfolk." Mental condition of the patient at this present time is described as follows: "During the past several months, according to witnesses, . . . [she] has been having visual hallucinations. She has seen people, Indian chiefs, snakes, etc., that were not there. She is not well oriented. She has become slovenly, untidy and careless in her appearance. She is unable to take care of herself. Memory loss has become very noticeable. Someone has to constantly watch her."

A report from another physician, who may be her family physician, which was enclosed with the papers stated that he had not seen the patient since July 23d, 1948. For three to four years previously he had treated her for anemia. He also knew she had been consulting an ophthalmologist because she was suffering with her eyes. He knew also that she had been seen by physicians in Norfolk and Richmond. In July he had not noticed any mental symptoms.

Presented to the Tri-State Medical Association's Semi-Centennial Meeting held at Williamsburg, Virginia, on the 21st and 22nd of February.

To summarize: She is a 57-year-old white woman, who has never been pregnant, nor had any serious illness. She has had an operation for appendicitis and been treated for anemia. Her present physical condition is generally good. She has consulted an eye specialist regarding poor vision. There has been no mental illness in her family, no tuberculosis, cancer, etc. Her mental symptoms were not noticed until six months ago. She had hallucinations, was not well oriented, was careless as to her personal appearance. Her loss of memory was marked. She could not be left alone to care for herself.

This information was dated February 2nd, 1949. She was admitted to the Eastern State Hospital the following day. In talking with me during admission examination she was pleasant and cooperative. She appeared apprehensive in that she wrinkled her forehead, but otherwise her expression was dull and apathetic. At times she smiled readily. She was not agitated or restless. She answered questions readily and spoke spontaneously. She told me that she had been at Westbrook Sanatorium, at Tucker Hospital, and at M. C. V. She even told me that someone wanted to operate on her brain and take out a tumor. Speech was clear; there was no mispronunciation; no nominal aphasia. There was no agraphia, and she used the pencil in her right hand. She did misidentify those around her, calling one by the name of someone she knew. Also she seemed entirely indifferent to the situation and to the examination. I received the impression of a true organic mental confusion.

She complained of progressive loss of vision of the right eye, which had not been satisfactorily benefited by her glasses. She said she had had weakness in both legs, the right more than the left, about a year ago, but that this had improved. She said she had very little headache, but did have dizziness, as she expressed it, "before me." By this she seemed to mean that objects she looked at whirled around, but by closing her eyes she could sometimes stop this.

Her lungs were found to be clear, her heart not enlarged. In the supine position blood pressure was 130/80, right; 144/90, left. Her abdomen was distended, tympanitic in the center, somewhat dull in the flanks. X-ray examination showed gas distention of the intestines, but no evidence of fluid.

Neurological examination revealed:

Narrowing of the right palpebral fissure; slight drooping of the right corner of the mouth; weakness but no inequality of grip in the two hands; no lateral nystagmus, but a questionable rotary nystagmus on looking up; loss of convergence of the right eye; left pupil larger than right, both reacting actively.

On ophthalmoscopic examination both optic discs were well defined and of good color, but the veins

in the right retina were markedly distended. No arterio-venous nicking was seen.

Reflexes: Of the abdominal reflexes only the superior were obtainable and those were hypoaactive; the abdominal muscle reflexes were strongly active and equal. Babinski of the right hand was positive, negative on the left. Babinski was negative on both feet. Oppenheim, Chaddock and Hoffman were all negative. There was a slight sucking reflex. Grasp reflex on the right was strongly positive, negative on the left.

The patient was sent to our Medical and Surgical Building for treatment for her abdominal distention.

In the meantime x-rays of the chest and skull plates were reported negative. Blood showed hemoglobin 13.0 grams (84%), W. B. C. 12,800—neutrophils 71%, Wassermann negative; urine: sp. gr. 1.027, albumin a trace, sugar negative.

Our psychologist, Miss Laura Terrell, did a Wechsler-Bellevue psychometric test. Although it is reported that the patient graduated from high school, and helped her uncle who was a commissioner of revenue, with his books, she found an I. Q. of only 82, which would classify her as dull normal. Although there was no deterioration according to the method of figuring this point, there was wide scatter in the credits attained on the different sub-tests. Also her verbal I. Q. rated 25 points above the performance I. Q. Miss Terrell considered the uneven nature of the defects indicative of a psychotic condition resulting from an organic brain lesion.

History as obtained by our Social Service Department; family and social history not pertinent. Her appendectomy, which was recorded on her commitment paper, was done in 1912. She had had a cyst removed from an ovary in 1929.

Her husband said that she had been seen by several eye specialists, and that she had lost the vision in her right eye. One of these specialists referred her to a neurosurgeon in Norfolk, and he in turn sent her to a Norfolk psychiatrist. She was examined, her husband believed, at a general hospital, and following this he was told that she had "a nerve pressing on her brain." On February 19th we received a report from the general hospital giving a diagnosis of "Left homonymous hemianopsia," and an electroencephalographic report, "No evidence of focal or generalized cerebral pathology." This is the complete report of their findings and is dated June 29th, 1948.

The husband first noticed her mental change in March, 1948, when she became forgetful and lost interest in things which she usually enjoyed. By June, 1948, she was becoming unable to take proper care of herself and the home, letting the dinner burn and not seeming to understand what to do

about it. Early in December she developed hallucinations, called the police to her home to get out an Indian Chief who was after a woman who had come in and gone upstairs. She also had auditory hallucinations, hearing the Indian chief's voice. It is interesting in that she also expressed it that the Indian chief was "squeaking." This is unusual in auditory hallucinations of mental patients. Her appetite became excessive, and she drank quantities of coffee, ten cups a day. She slept well at night and often slept in the day.

Her sister came to the hospital ten days ago and gave the information that a psychiatrist in Richmond thought that she had a brain tumor, but that a neurosurgeon to whom he referred the case did not think so, since she did not have much headache. This was not quite accurate, however, according to brief reports which we obtained later. This psychiatrist's neurological examination in January, 1949, was negative but he still suspected a brain tumor and referred the patient to a neurosurgeon who saw her on January 20th, 1949. The latter doubted the extent of impairment of vision in the right eye. He reported that she did not complain of headache and had vomiting only when she rode in a car. On ophthalmoscopic examination he found no abnormality and no signs of increased intracranial pressure. He, however, recommended that she be admitted to the hospital for air studies to rule out or establish the presence of intracranial surgical lesion. The patient's husband refused to permit the hospitalization and additional studies. The husband then signed a petition on January 31st, 1949, for her examination and commitment to the Eastern State Hospital. The papers were completed on February 2nd, and she was admitted here the next day.

Because of her mental symptoms, history and neurological findings, I asked Dr. Walther Riese, our consulting neurologist, to see her, which he did on February 19th.

February 19th, 1949. *Neurological examination by Dr. Riese.*

General behavior of this patient did not show any remarkable features or abnormalities as to type of reaction. However, her answers were given slowly and in a monotonous voice, and there was a mild degree of sleepiness, or a slight form of apathy, throughout the examination. No speech defect could be noted, formation and choice of terms, as well as understanding, and nominal function being intact. On very intensive examination, patient seemed able to read, and to understand written, pictured and printed symbols. Her writing was also intact, fluent and rather voluminous.

It soon became obvious that patient did not fix her gaze, and when submitted to a preliminary examination of her visual function, her right eye

seemed to be blind, whereas on repeated testing of the left eye, restriction of the temporal field was obvious, this defect being compatible with the left homonymous hemianopsia discovered previously in Norfolk. There was no defect in voluntary power; no abnormal involuntary movements, but a rather marked forced grasping, today somewhat more marked on the left. (According to Dr. Beamer's previous examination forced grasping was evident only on the right.) There is a definite tendency to keep extremities in a position of passivity (catalepsy). There is no Babinski today, but the sole of the foot is very sensitive to mechanical stimulation and an abortive mass reaction is produced. Knee jerks and ankle jerks are equal and about normal on both sides. There are no pyramidal signs. Abdominal reflexes are absent on both sides; there is a bilateral Hoffman. On percussion of the skull the right side was experienced as more sensitive than the left.

*Impression:* Judging from the history, the development of the clinical picture, and the present condition, I have the definite though preliminary impression that the suggestion that this patient may have a brain tumor, is justified. First of all this patient does have objective signs of involvement of the central nervous system, both bilateral and unilateral. The bilateral forced grasping, the bilateral Hoffman, and the cataleptic tendencies, as well as the abortive mass reflex, belong to this category. The percussion sensitiveness of the right side of the skull, the left homonymous hemianopsia, rather point to the right hemisphere as the site of the lesion. Signs of more generalized type, suggestive of increased intracranial pressure, are the slowness in reaction and the sleepiness. It was also observed during the examination that the patient was very thirsty, and I leave it open as to whether this is a pressure sign, or a localized sign. I do not see what other conditions should be considered, and since the case has been only slowly progressive, and uninterrupted by acute episodes, such as are seen in vascular disturbances of various types. Nor does the blood pressure suggest any hypertensive state.

I suggest lumbar puncture with all precautions. The result of the protein study of the spinal fluid should give evidence, or perhaps deny the possibility, of a tumor. It must be kept in mind, however, that the clinical picture of brain tumor in elderly people is in many cases indistinct; that it may simulate any disease, particularly any psychosis, and that the classical pressure signs are frequently missing. In this case the absence of any type or subtype of aphasia would be entirely compatible with a right-sided brain lesion in a right-handed person.

The possibility of a metastatic tumor is to be



considered in a woman of this age, and it is well known that in some cases of metastatic involvement of the brain, signs are detectable earlier than those of a primary growth. Therefore I suggest a complete physical investigation, special attention being given to uterus, lungs, bronchi, etc.

A point of particular interest to me is this: We have found that when the patient is sitting or standing, the grasp reflex is not obtained. When she is lying down it is easily and definitely elicited.

#### CONCLUSIONS

Although this patient's symptoms were first noted 11 months ago, the progress of objective signs has been very rapid only in the past month. On June 29th, 1948, a left homonymous hemianopsia was diagnosed in Norfolk. Only one month ago, a psychiatrist found the neurological examination to be negative. The neurosurgeon on January 20th, 1949, found no positive evidence of intracranial lesion. On February 3d, she showed changes in the retinal vessels in the right eye, and a right grasp reflex.

When examined again on February 19th, the veins of both eye grounds were found dilated, there was definite blurring of the right optic disc, and some blurring, especially on the nasal side, of the left optic disc. The grasp reflex was bilateral, even more marked on the left than on the right. She showed an increase in thirst and somnolence.

It is unquestionably dangerous to do a spinal puncture on this patient. A ventriculogram is the procedure we have in mind for the next step, but we will have to get the husband's permission, and this was previously refused. With the down-hill course she has shown in this hospital, I believe that it is urgent that treatment be instituted if she is to live beyond the age of 57.

#### ADDITIONAL

Following the reporting of this case a ventriculogram was done on the patient which was "well within the limits of normal." She stood the operation well, but three weeks later lapsed into deep coma after having been semicomatose for a few days. Fourteen weeks after admission to the hospital, and after six and one-half weeks of deep coma, the patient died.

Autopsy revealed cerebral edema with almost complete plugging of the foramen magnum. At the base of the brain there was a cystic growth, a craniopharyngioma. This tumor had flattened the optic chiasma and destroyed the thalamus, but the destruction was more extensive in the right hemisphere than in the left hemisphere.

#### CLINICAL USE OF SYNTHETIC AND FERMENTATION CHLORAMPHENICOL (CHLOROMYCETIN)

(J. E. Smadel, in *Bul. N. Y. Acad. of Med.*, Dec.)

The new antibiotic, chloramphenicol, has proven extremely useful in the treatment of epidemic and murine typhus.

scrub typhus, and Rocky Mountain spotted fever. In most of these rickettsial infections, which previously had been only moderate amenable to treatment with para-aminobenzoic acid, patients receiving chloramphenicol became afebrile in a day or so after therapy was instituted.

The new synthetic form possesses the same antirickettsial properties as the fermentation type.

#### BEWARE OF ASSUMING ANY PATIENT DOES NOT REALIZE WHAT IS GOING ON

(J. Stuart Jones, Liverpool Royal Infirmary, in *British Med. J.*, March 19th, 1949)

Ann, an intelligent and charming little person of 11 years, is now convalescent. When, soon after admission to hospital with subacute rheumatism, she developed a fulminant attack of chorea we wondered if ever we were going to calm her never-ending involuntary movements. Overnight she had lost her speech completely. From time to time her jerky movements were punctuated by a weird scream—surely, we thought, something purely reflex and unconscious.

We had thought that she was too far gone at the height of the illness to be conscious of what was going on around her, but we were wrong. Incidents of the whole 29 days when she could not speak she remembers and can recount vividly. She has clear recollections of the visits of the various doctors. From something her father let fall in her hearing she realized that he thought (as indeed we all did at one period) that she would not get better.

The screaming noises were her attempts to tell us something. For example, on Christmas Day she had no presents. She realized that this was to prevent her getting excited (in actual fact we never thought that she was "with us" sufficiently to appreciate the significance of the day), but she was none the less disappointed, and she says that she tried to tell the nurses that she wanted to go home by pointing to the window and trying to utter the word "home." They, alas, saw only purposeless movement and heard a shrill cry. She remembers crying over headaches, which (she tells us) were brought on by sudden noises and also by the light over her bed. Added to her other troubles, her joints were very painful, and although the nurses hurt her when they moved her she could find no way to tell them.

Now, Ann is convalescent, and can tell us these things with an engaging grin. To us it is a salutary lesson that patients who are desperately ill may take in far more than the ordinary observer suspects.

#### IMPORTANT OBSERVATIONS ON PNEUMONIA (Thomas Anderson, in *Edinburgh Med. J.*, Dec.)

Such evidence as we have shows that the causative pneumococci have lost little of their power of invasiveness in recent years, so it may reasonably be assumed that chemotherapy must take a large share of the credit for the great lessening in the mortality in the middle-age periods. Attention is drawn to the continuing high mortality in infancy, and it is argued that the Glasgow experience suggests that pneumonia in the first year of life is not so much a primary infection as an indication of an impoverished host resistance. A survey of the results obtained with sulphamide and penicillin does not support a view that the latter has any marked superiority over the former. It is felt that the results of therapy are unlikely to be improved further by any enhancement of the efficacy of the therapeutic agents but must depend more upon a study of non-specific factors likely to improve the capacity of the host to withstand a heavy bacterial invasion.

BRONCHOGENIC CARCINOMA occurs frequently as carcinoma of the stomach.—J. S. Harter, in *Texas J. of Med.*, Dec.



## Lessons From an Unusual Case of General Paresis

ISAAC C. EAST, M.D., Williamsburg, Virginia

**H**EREWITH is presented the case history of a patient with syphilitic meningo-encephalitis (general paralysis), with manic features.

The patient, a well-developed, well-proportioned, strong-appearing, 36-year-old white man, was admitted to Eastern State Hospital on December 16th, 1948, as a first admission, with a history of rather recent and very acute onset—manifested by extreme hyperactivity, paranoid delusions, marked agitation, combativeness, and grandiose delusions. He owned a railroad; he was going to buy cars for his friends; he was going to have all the police force in the City of Richmond killed. He became paranoid toward members of his family and threatened to have them placed in jail. He demanded that he be paid \$1,000 each hour for the time he was held in the Richmond jail, when it was necessary to detain him for a few hours when he became unmanageable while en route to the C. & O. Hospital at Clifton Forge, Virginia. He was brought to this hospital in handcuffs by the Richmond police, who reported that he was extremely excited and abusive all the way from Richmond. On admission, he was agitated and very strongly paranoid. He was very threatening in his attitude toward those responsible for his admission. He threatened to kill the police who brought him here. He was quite a problem for a few days, requiring sedation and close observation, as he attempted to escape from the hospital by using a spoon to pry open a window. His reactions continued to be those of a maniac for several days and it was necessary to seclude him for short periods on the receiving ward where he was a markedly disturbing element. Because of his hyperactivity, he was placed on electroshock therapy on December 22nd, six days after admission. Seventeen electroshocks at first seemed to calm him; however, later it was evident that shock therapy was not producing the desired result, and it was, therefore, discontinued. We were well aware of the fact that the patient was a paretic. We hoped for no more than modification of his behavior.

Since 1943, this patient has worked as a brakeman and as an extra conductor for the C. & O. Railroad Co. Up until his recent illness, the patient was satisfied with his job and felt that it promised a good future.

Presented at the Clinic held at the Eastern State Hospital, February 21st, as a feature of the program of the Fifty-first Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Williamsburg, Virginia, February 21st-22nd, 1949.

Personality: Rather extroverted—a semi-professional boxer—active interest in sports.

*History as given by family:* Married since December of 1939 and has a child nine years of age in good health, according to the wife.

Streptococcic throat and bronchitis in 1946—uneventful recovery (no history of syphilis).

Steadily employed for the last ten years.

Never arrested. Closely attached to his family with a lot of family pride, and a good provider.

*Present Illness:* According to his wife, his behavior was not abnormal until December 9th, 1948, at which time he became very excited, irritable and emotional concerning his work. He wrote a long and confused letter to the railroad company complaining about some injustice to him. He accused his fellow-workers of spying on him and of thinking that he was "crazy." On a shopping tour with his wife, he wanted to buy everything that he saw. There was a steady build-up in his agitation. He constantly changed the arrangement of the furniture and seemed obsessed with the idea of painting the house, induced various members of the family to participate in this project and named one of the members "president" of the work. Significantly he asked him family to tell him to be quiet—this they did but was effective only for a minute or two. He referred to himself as "King Bee" and to his wife as "Queen Bee," showing his ideas of grandeur. He has felt that he was a millionaire and wanted to give his friends cars.

On the ward, he clung to each physician who came into the receiving ward and begged to go home, maintaining that he had been unjustly placed here and that there was nothing wrong with him. He frequently wept as he told of being separated from his wife and child, and of what a good family man he had been. Three weeks after admission, without the slightest provocation, he attacked an older patient, inflicting a deep laceration on the right side of the face. Patient has continued to deny that he ever had syphilis and no member of his family is, apparently, aware of any previous treatment for syphilis.

*Physical examination:* Physical examination revealed a well-developed, well-proportioned, 36-year-old white man, with greying hair, appearing to be in good physical condition. There was a small scar in the suprapubic region—possibly this was from a chancre. The only positive finding on physical, including neurological examination, were thrombotic hemorrhoids, a mild hypertension of 150/100 and

a scar in the suprapubic region, as mentioned above. He had absolutely no positive findings on neurological examination.

**Laboratory findings:** The first blood Wassermann was doubtful, the next positive—this on the 7th of January. Spinal fluid Wassermann was strongly positive, being "4 plus in .0625 dilution." Total protein was 100 mgs. per cent and the mastic curve was 4-4-4-3. The chest x-ray was negative. Urinalysis and blood picture were not significant. He had a 90 per cent hemoglobin and a 4,400,000 white cell count.

**Treatment:** This patient is now on a treatment of six million units of crystalline procaine penicillin G in sesame oil containing 2 per cent aluminum monostearate. He will be inoculated with malaria tomorrow and we plan to give him 100 hours of fever therapy above a level of 102, if his general physical condition does not contraindicate. It is felt that the concurrent administration of penicillin and fever therapy is desirable, in that the spirochetes are made more vulnerable to the action of the penicillin by the elevated temperature. He is considered to have a fair prognosis.

#### NEW COUMARIN SUBSTANCE GIVES EXCELLENT RESULTS (C. C. Burt et al., Prague, in *British Med. J.*, Dec. 3rd)

This paper records the results of clinical tests of new coumarin product, bis-3, 3'-(4-oxycoumarinyl) ethyl acetate, referred to further as B.O.E.A.

In the majority of cases 0.9 to 1.2 g. of B.O.E.A. was given on the first two days, and thereafter dosage was regulated by response to treatment as shown by prothrombin level and clinical signs. 0.3 to 0.6 g. usually proving sufficient. It is generally desirable to maintain the prothrombin level between 20 and 30% of normal, but in some cases a level of 40-50% of normal proved satisfactory for clinical improvement.

Results in 126 cases of patients with venous thrombosis, pulmonary emboli, arterial thrombosis, or emboli who have been treated with a new coumarin compound for periods of five days to ten months are reported.

In over 80% of cases given adequate dosage the prothrombin level of the blood was reduced to under 50% of normal within 36 hours of the start of treatment, and it returned to over 50% of normal within the same period after withdrawal of the drug. No gross cumulative effect of the drug has been observed, although in 12% of cases the prothrombin level remained below 50% of normal for periods up to four days after discontinuing the substance.

Apart from slight nausea and vomiting in a small number of subjects, due possibly to the bitter taste of the tablets, no toxic effects were noted.

Transient haematuria, through erroneous overdosage, occurred in one case, petechial haemorrhage developed in the thrombosed limb in another, and one patient with congestive heart failure developed a haematemesis during treatment.

While under treatment two patients died from causes not attributable to the anticoagulant therapy.

#### THE RESULTS OF THYMECTOMY IN MYASTHENIA GRAVIS (Geoffrey Keynes, in *British Med. J.*, Sept. 17th)

The connection between myasthenia and an abnormal thymus gland is now well established, but there is no clue to how or why the gland's function becomes abnormal.

The chemistry of the secretion which is producing myasthenia is still quite unknown, and no active principle has been isolated.

In the meantime surgery, with the help of neostigmine, has made a practical advance in being able to alleviate the lot of many of the unfortunate sufferers from myasthenia gravis. There are few more pathetic sights than an otherwise perfectly healthy girl or youth reduced to a state of dependence and physical helplessness, and few more gratifying sights than their dramatic restoration to normal activity, a feat which surgery can now on many occasions claim to have achieved.

From February, 1942, to July, 1949, 155 patients with myasthenia gravis had been treated by surgical extirpation of the thymus gland. Of 120 patients who did not have thymic tumours and survived the operation, 79 (65%) have shown a complete or almost complete remission of the symptoms. These could not be accounted for as "spontaneous remissions." The operative mortality in Keynes' hands is at present 4.2 per cent.

The results are influenced by the duration of the disease before operation: the shorter the history the better the results. Early operation is indicated by this fact, and by the 11.6 per cent incidence of tumours, the development of which should, if possible, be anticipated.

#### A NEW TREATMENT FOR SUPERFICIAL MYCOSES (Louis Schwartz et al., Washington, in *Industrial Medicine*, June, '49)

More than 100 years ago Lagenbeck demonstrated that thrush is caused by *Oidium albicans* and Schoenlein proved that favus is caused by *Anchorion schoenleinii*. These were the first discovered fungi pathogenic to humans. Shortly afterward the fungi causing tinea circinata and tinea versicolor were described 30 years later Fox described the fungus causing tinea pedis.

The formula:\*

Salicylanilide (Shirlan Extra) .....	5%
Trimethyl octadecyl ammonium pentachlorophenate (Hyamine 3258) .....	1%
Isopropyl alcohol .....	94%

was put up and tried on cases of tinea pedis, tinea cruris, tinea capitis and other superficial mycoses. It was found that this solution acted rapidly on the ordinary forms of tinea pedis.

The solution can be applied with a pledget of cotton on an applicator or with a small brush b.i.d. The feet and interdigital spaces should first be cleaned, dried, and freed of dead skin, and the fissures exposed. Small vesicles are antiseptically opened. The fungicidal solution is then applied and the parts left uncovered until the solvent evaporates. There is an immediate relief or marked lessening of the pruritus. As a prophylactic measure after the case is cured, it can be applied e.o.d.

Acutely inflamed cases should first be treated by soothing soaks or wet dressings such as aluminum acetate 1-1000\*\* until the acute symptoms have subsided. This may take from two to nine days. The fungicidal solution may then be applied and allowed to evaporate before the stockings are put on or a dressing applied.

Fifty successive cases of superficial fungus infections were treated by the topical application of a solution of salicylanilide and Hyamine 3258 in alcohol; 43 cases were clinically cured, and seven were improved.

Of 38 cases of tinea pedis of varying degrees of severity, 36 were clinically cured in an average time of less than three weeks. The other two cases were much improved. Four out of five cases of tinea cruris were clinically cured in an average time of 12 days. Four cases of onychomycosis improved, but were not cured in from one to four months of treatment.

\*Fungi-Treat, Dome Chemicals, Inc.

\*\*Domboro Tabs, 1 to a quart of water.

## Thrombosis of the Portal Vein

W. RUSSEL FLOYD, M.D., Concord, North Carolina

**T**HROMBOSIS of portal vein is not a rare condition but one which is more often seen in an autopsy protocol than as a clinical diagnosis. It was first adequately described by Langdon Brown in 1901.<sup>1</sup> There are two main types, the most common being that associated with suppurative in the reaches of the portal system, the less common type developing blandly or without infection. The Johns Hopkins Bulletin<sup>2</sup> reports 21 cases of portal thrombosis in 5,050 autopsies. A German report gives 63 cases in 25,000 autopsies. Out of 5,600 autopsies at Los Angeles General Hospital, Pallette<sup>3</sup> reports eight cases.

The septic type, sometimes called portal pyemia, was commonly seen in earlier days before abdominal surgery became so popular as it is now and before the newer antibiotics and anticoagulants were in common use. The associated hepatic abscess or suppurative cholangitis was a very common finding. The vein is rarely completely blocked and therefore ascites is uncommon. The diagnosis is easily made when infection and septic symptoms are given due consideration.

The septic or bland type is characterized by filling of the portal vein and its radicles with an uninfected thrombus resulting in occlusion of the vein.

### Causes:

1. Extraneous—tumor growths, gallstones, etc.
2. Intrinsic—sclerosis of a vein
3. Mechanical—cirrhosis of the liver
4. Toxic—chemical, alcoholic.

Experimentally in dogs, sudden complete occlusion of the portal vein results in death in two to three hours in what is called splanchnic shock. If the vein is not completely ligated but gradually blocked in stages, the animal does not die, and collateral circulation is established about the portal vein till the lesser omentum resembles a cavernous hemangioma. Twenty-two cases of complete occlusion of the portal vein found at autopsy were reported in the German literature by Klemperer.<sup>4</sup>

The symptomatology of bland portal thrombosis in humans depends on the rapidity of its occurrence and the extent of involvement of the tributary veins. In many cases there is pain in the right upper abdomen simulating gallstone colic, and shock may develop. Ascitic fluid may accumulate rapidly or slowly, depending on the degree of the blockage. The process may involve the mesenteric veins and

smaller radicles and gangrene of the intestine result.

Nausea and vomiting are common and at times a bloody diarrhea supervenes. Leukocytosis is usually marked. Most of the cases of acute thrombosis prove fatal from shock or intestinal gangrene and peritonitis. Several cases of thrombosis of smaller mesenteric vein branches have been reported in which intestinal decompression was done, by either gastric suction or Miller-Abbott tube, and anticoagulants were administered. I have not found a report of a case of thrombosis of the portal vein so treated.

### Report of Cases

**CASE 1.**—A 62-year-old white man was admitted to the Cabarrus County Hospital with generalized, severe abdominal pain of 24-hours duration. He had suffered a vague abdominal pain for the previous two weeks, but had not vomited until day of admission. Bowels had been kept open with purgatives, and there had been no diarrhea or bleeding.

Patient's general health had been good and he had worked in the mill till his present illness. He had experienced some pain in the lower limbs on walking and had been told his blood supply was not good in his legs. There had been a hemorrhoid operation in the past several years with relief of symptoms.

The family health history contributed no information of value.

The patient was a large, obese, elderly, white man who appeared somewhat shocked; he was pale and clammy though blood pressure was 160/100. Temp. 97, pulse 90. He complained of generalized abdominal pain, nausea and vomiting; no bowel movement in past 24 hours, though he had taken an enema at home. Heart and lungs were within normal limits, ecg. negative. Abdomen was very large, somewhat tender throughout. No masses felt; there was muscle guarding of right upper quadrant. Peristalsis was decreased; no hernia; no scars. The peripheral vessels were moderately thickened. An upright abdominal x-ray film did not show sufficient gas or fluid levels to make a diagnosis of bowel obstruction, though there was considerable gas in intestinal tract. No stone shadows were seen. W.B.C. 18,950—polys. 87, lymphs. 12, monos. 9; urinalysis negative; Kahn negative.

The diagnosis of an acute abdominal emergency—most probably either gallbladder disease or bowel obstruction—was made and an exploratory laparotomy was thought in order. The diagnosis of portal thrombosis was not considered.

At operation under sodium pentothal-nitrous oxide anesthesia an increased amount of straw-colored fluid was found in the abdomen. An 18-inch segment of ileum was markedly discolored and edematous, but was still viable. The arterial supply was not involved as a good pulsation was felt in the mesentery. There was considerable edema of the mesocolon. The gallbladder and appendix were palpated and found normal. Much induration was found in the region of common duct and portal vein. The blood pressure of 160/80 at the beginning of operation dropped to 80/? during the exploration, despite the intravenous in-



fusion of plasma.

The patient's chance for survival was considered better with conservative treatment since the bowel was viable and the general condition was so poor, so the abdomen was closed after injection of 200,000 units of penicillin.

Postoperatively, Wangensteen suction was used continuously. Heparin, 200 mgs., was given IM in the form of Pitkin menstruum; and dicumolol 300 mgs. the second day, 200 mgs. the third day, with Levine tube clamped two hours after each dose. Nourishment was given parenterally first week postoperative—protein, glucose, vitamin and fluid. Prothrombin time daily ran between 50 and 11 per cent of normal. After 15 days the giving of blood brought prothrombin time to normal.

The second postoperative day the h. p. dropped to 100/70 and there was considerable increase in the abdominal pain. The entire convalescence was marked by profuse sweating. The t. did not go over 101.2, but was 100 or over for two weeks. Bronchial infection developed for which penicillin was given. Ecg. was again normal. Patient was discharged from the hospital in 22 days in good condition.

Patient improved and returned to work in the mill at which he remained till six months later, at which time he was readmitted to the hospital with pain in the right chest and cough, shortness of breath and blood spitting of one week's duration. He had pain in right leg and swelling of both legs for three days. Diagnosis of multiple phlebitis was made with embolus of right lung which was proven by x-ray of chest. Heparin 2 c.c. was given IM in the form of Pitkin menstruum. Dicumolol, 600 mgs., given by mouth in three days. Prothrombin time was brought down to 19 per cent of normal. Penicillin was given for chest condition, after six days of seeming improvement, the patient began vomiting blood and had a tarry stool. He was given five pints of blood and b. p., which had fallen to 70/50, rose to 110/80, bleeding stopped. This bleeding was thought to be from gastric ulcer; on an ulcer diet no more bleeding was seen. The phlebitis of both legs became progressively worse and the right iliac vein became thrombosed—right leg swollen and tender along iliac vein to well above Poupert's ligament. Surgical intervention was considered but nothing short of ligation of the inferior vena cava was thought to be of any good and the patient's general condition was too poor for this procedure. He developed phlebitis in left arm and forearm which was swollen and was very painful. No more anticoagulants were given for fear of gastric bleeding. Seventeen days after admission, patient had a severe pain in chest and expired in a few minutes of pulmonary embolism.

#### *Pathological examination and interpretation:*

Within one section of the portal vein there is an old adherent recanalized thrombus, composed of a rather dense fibrous tissue with numerous small completely endothelialized vascular channels through it. Also are found a scattering of iron-laden macrophages within the fibrous connective tissue. This thrombus is firmly adherent to the inner surface of the portal vein.

Histologic examination of the inner organs essentially confirms the gross findings. Pulmonary infarctions are in various stages of development; some of the older ones show beginning organization of their peripheries.

The grossly described thrombi in the portal and superior mesenteric vein are completely organized and recanalized. It is assumed that the thrombus in the superior mesenteric vein never completely occluded the lumen, or that at the time of inception a complete occlusion was of very brief duration. The phlebosclerosis was apparently only spotted and not noticed to any significant degree histologically.

The benignity of the peptic ulcer of the stomach is

confirmed. Since the spleen is not significantly enlarged and there is no ascites, primary portal hypertension or primary disease of the wall of the portal vein can be excluded. The thrombosis of the portal vein, therefore, must be classified as primary, of cryptogenic origin. It is rather significant that in spite of the changes in the splenic vein, and the formation of thrombus in the portal vein a Banti's syndrome has not developed.

CASE 2.—A 73-year-old man was admitted to the Cabarrus County Hospital, because of nausea; and pain in abdomen, of three days' duration, worse about navel. He passed gas and his bowels moved the day of admission. He had had good health, no previous admissions and no serious illnesses or accidents.

A well-developed, elderly white man—temp. 99.5; pulse 100; pupils react to light; nose and throat negative; chest clear; heart, no enlargement or murmurs; b. p. 138/80; abdomen, moderate tenderness in right, some muscle guarding; no hernia; prostate moderately enlarged; W.B.C. 17,350—polys. 71, lymphs. 28, monos. 1; urine, few pus cells; Kahn negative.

It was thought best to explore the abdomen for possible acute appendicitis or cholecystitis. A right rectus incision was made, and the stomach, gallbladder, common duct, kidneys, small and large intestines found negative. No Meckel's diverticulum was found. The pancreas was indurated and nodular thought to be subacute pancreatitis. Appendectomy was done as a routine procedure.

The postoperative course was characterized by gaseous distention of the abdomen in excessive amount. Wangensteen suction was used for three days, when gas was passed by rectum, and the patient was then gotten out of bed. Enemas and prostigmin were given on the fourth day. On the sixth day temp. was normal and condition improved generally, but still there was more abdominal distention than normal. The extremities showed no swelling or tenderness. Jaundice and bleeding from gastrointestinal tract was not seen. On eighth day upper abdominal discomfort increased and gaseous distention increased. Given enema and prostigmin. Upon finishing his enema patient complained of severe pain in chest, lost consciousness and in a very few minutes expired.

At autopsy patient was found to have died of multiple emboli to lungs. Thrombosis of portal, splenic and mesenteric veins was found.

No cause for these thromboses was found, therefore, this must be called an idiopathic or bland thrombosis of the portal vein. It is conjectured that if the patient had not had the misfortune to die from pulmonary embolus at this time, he probably would have gotten well from his portal thrombosis which would have gone undiagnosed. Also, if any thromboses of any vessels had been suspected anticoagulant therapy would have been indicated.

#### SUMMARY

Two cases of idiopathic or bland thrombosis of portal vein are reported, neither of which was diagnosed clinically. The first, treated with anticoagulants and expectant therapy, recovered from the portal thrombosis by recanalization of the portal vein. It is our belief that if this patient had not had the gastric ulcer, and adequate anticoagulant therapy could have been continued, he would have recovered.

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# DEPARTMENTS

## HUMAN BEHAVIOUR

For this issue THOMAS F. COATES, M.D., Editor  
Westbrook Sanatorium, Richmond

### THE IMPORTANCE OF CAREFUL STUDY OF "NERVOUS" PATIENTS

THERE is a tendency among us to jump to conclusions in our diagnoses of mental and emotional disorders. This is particularly true when we deal with patients who are our personal friends. In such cases we are naturally particularly anxious to make the correct diagnoses and to give the proper treatment—but our emotional relationships with the patients thwart our sincere efforts to be objective and logical in our reasoning.

Recognition of all early psychoses is difficult, particularly so with the schizophrenias. When a patient shows the full-blown picture of hallucinations, delusions, emotional disharmony, signs of regression, deterioration, etc., any old grandmother will know "he's crazy"; but as physicians we must strive for diagnosis before this picture appears and thus provide early treatment with its better chance for cure, and possibly prevent many such tragedies as are recorded daily in the newspapers.

It has been long known that schizophrenia may in its early stages disguise itself as a psychoneurosis. This occurs in a large group of cases. It is especially important to properly evaluate these cases because the treatment of schizophrenia differs from that of the more benign disorders. Thus, by early diagnosis, much time and money spent on misguided treatment may be saved.

There are many symptoms that are suggestive of early schizophrenia. No one or two of these can be considered diagnostic, but combinations of them are significant. A careful evaluation of the early development and personality make-up of the patient should be made. Suspicious symptoms are shyness, timidity, marked mood changes, seclusiveness, extreme sensitivity to the environment and to other people, history of severe reactions to environmental changes, inability to establish close relationships with others, suspiciousness of the motives of others, etc.

More specific symptoms are a history of definite personality changes, a feeling of being dazed and bewildered, feeling of not being able to reach people, feeling of numbness and absence of emotion, constant feeling of fear and discontent and feelings of unreality. In many cases emotional outbursts without provocation are observed. The appearance of gross conversion symptoms, such as paralyseis, without any preceding traumatic experi-

ence, should be viewed with suspicion. Also, in early schizophrenia, there is a tendency toward spontaneous and free discussion of psychosexual material which would usually be repressed in the true neurotic. Another point is that the neurotic will attempt to explain his symptoms in a logical, coherent manner. On the other hand, the schizophrenic will either offer no explanation or will give some obviously illogical explanation. Finally, diffuse unrelated "neurotic" symptoms appearing simultaneously should make one wary of something more malignant than a neurosis. Such patients may have at once tension, anxiety, conversion symptoms, palpitation, headache, anorexia, insomnia, phobias and obsessions. Usually the neurotic's symptoms are more focalized.

In conclusion, the point is made that our "nervous" (neurotic) patients deserve careful objective study, avoiding the natural tendency to overlook significant symptoms in friends, relatives and patients previously known to us, and looking for and properly evaluating certain symptoms and groups of symptoms which may indicate an early psychosis.

## THERAPEUTICS

J. F. NASH, M.D., Editor, St. Pauls, N. C.

### CARE OF FRACTURES IN THE AGED

FOR the last 10 years Crabb<sup>1</sup> has, in all of his fracture cases, "furnished the two things necessary for healing and in which the aged patient is deficient; *i.e.*, the material necessary for the repair of the bone, and a hormone to build the material into and to repair the fracture."

He gives such patients 10 c.c. of a 10 per cent solution of calcium gluconate intravenously and 1 c.c. of parathyroid hormone intramuscularly every third day for two weeks, then the same dose of each once each week until healing is assured.

The reasoning is along this line:

The normal active processes of metabolism, growth, and healing of youth become very much reduced and the 90-year-old skeleton is so dry and chalky that it is almost impossible for nature to extract enough calcium from the patient's skeleton, or from food ingested, to form the callus necessary to cement and seal together the fragments of the fractured bone.

Three cases of fractures in the aged are presented, with x-rays.

The first, 74, had diabetes for several years, is still taking insulin. Otherwise she is in good health at 81.

Fracture was set and immobilized with a "well-leg splint" Patient was turned on abdomen p.r.n.

1. J. A. Crabb, Topeka, in *Med. Times*, Dec.

each day, given insulin to control diabetes, calcium gluconate 10 c.c. 10 per cent sol. intrav. and parathyroid hormone  $\frac{1}{2}$  c.c. intram. every third day for two weeks, then once each week for three more weeks.

The second, when past 90, surgical neck of right femur was fractured. Adjusted and nailed; 10 c.c. calcium gluconate intrav. and 1 c.c. parathyroid hormone intram. She had been treated constantly for pernicious anemia since she was 78. She is senile. Her fracture is healed.

The third, 98, when she fractured her hip in December, 1947. She was thin and poorly nourished. Fracture of femur at surgical neck complete, but the fragments were in contact at one edge, so they were immobilized without disturbing the fragments.

She was carefully nourished and given two or three transfusions, also calcium gluconate 10 c.c. 10 per cent sol. intrav., and 1 c.c. parathyroid hormone, intram., every third day for four doses, then one each week for three or four more doses. She was put on her feet August 3rd, 1948, on her 99th birthday. She is still walking, was 100 on August 3rd, 1949.

#### NEW TECHNIQUE FOR CONTROL OF EPISTAXIS

(O. J. Dixon, Kansas City, Mo., in *Jl. Mo. Med. Assn.*)

The most profuse type of epistaxis occurs in those with hypertension, and in many cases is an automatic and essential type of therapy. Once this vascular escape has been established, it is apt to recur and no form of local therapy inhibits its recurrence. One should make an effort to locate the bleeding point and use the most satisfactory method for the control of the blood flow.

Gauze packing is unsatisfactory. Small, firm, sterilized marine sponge in sufficient number, moistened in sterile normal saline, should be packed firmly within the nasal chamber and left in until thrombosis and organization have had time to take place. If bleeding continues remove the sponges immediately and pack with fresh ones. The first sponge is inserted beyond the site of the bleeding, because there may be an additional bleeding point not easily observed. This posterior sponge also acts as a support for the sponges subsequently inserted and affords a tighter packing. Should these posterior placed sponges fall into the epipharynx they are easily expelled.

Marine sponges are of finer, softer texture and greater elasticity, affording better drainage and producing much less pressure damage to the nasal mucous membrane.

Boiling or autoclaving destroys the elasticity of marine sponges; sterilize by removing all foreign material, soaking overnight in tincture of green soap solution, washing thoroughly by squeezing under running water, soaking in Bard-Parker solution overnight, again washing thoroughly by squeezing under running water. Then place in a shallow sterile pan and thoroughly dry under the direct rays of an electric heater or dryer, and place in sterile wide-mouth covered jars until used. Resist the temptation to remove the sponges after 24 hours to relieve tight feeling. Leave in position for 48 hours as a clot within the sponge separates spontaneously with no interruption of the normal healing. It is often more satisfactory to remove only one sponge at a time. The presence of an offensive odor should cause no alarm.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### SOME COMMON CONDITIONS OFTEN MISDIAGNOSED

DOCTORS too busy to take an adequate history and who accept the diagnosis made by laboratory girl or roentgenologist practice "decerebrate (i.e., brainless) medicine."

With this trenchant sentence a great doctor<sup>1</sup> would stab awake those of us who peacefully sleep in an inexcusable habit.

Then he goes on to particularize.

A man with a terrible feeling of distention under the upper third of his sternum had been to many consultants. On the basis of a slight widening of the shadows in the mediastinum, it was thought by some that he had a mediastinal tumor, by others a lesion of the esophagus, by others coronary heart disease. The history did not indicate any of these conditions; he had no trouble in swallowing or walking or breathing, and our roentgenologists could see nothing wrong.

I drew from him that his troubles began when his wife divorced him, jailed him for failure to pay alimony, and took his son away from him. He spent his days and nights trying to figure out some way of humiliating her as he had been humiliated. So far as I could see he had only a severe form of globus hystericus.

Often the patient hasn't dyspnea; what she has is air hunger. She can walk rapidly or play tennis without discomfort, but may wake feeling she can't get air deep down. Perhaps before she went to sleep she had a row with a daughter or her husband. She gets up and rushes to a window to get more O. She gets frightened enough and pretty soon she is dizzy and hysterical. A doctor is called in frantic haste, and then the woman's future health depends on what type of man he is. If, on arrival, he recognizes air hunger, if he reassures the woman, gives her a little bromide and sends her back to bed, all is well. But if he "rushes" her to a hospital and gets a dozen eggs, and finally says that she has had a coronary attack, she may be a cardiac neurotic for the rest of her life.

An orchestra leader, working day and night, one evening felt faint and dizzy, was "rushed" to a hospital, where 10 days of tests showed nothing significant. If then he had had a rest of a few weeks all would probably have been well; but his doctor "felt" that he had better play safe; so "you must have had a little coronary blockage, so stop smoking, give up your presupper cocktail, sell your car, move into a one-floor apartment, don't walk, take a taxi; eat no meat, no salt; take a little digi-

<sup>1</sup> W. C. Alvarez, Rochester, Minn., in *R. I. Med. Jl.*, Nov.

tal; don't sleep with your wife." It was only with the greatest difficulty that I got him to go back to work. Today he is perfectly well.

Many a neurotic wakes in the night feeling that she is dyinfi. Everything depends upon the good sense of the first doctor who arrives. If he reassures, gives her a sedative and gets everyone back to bed, all goes well. "Rushing" to the hospital and innumerable tests makes her sure something very serious must have happened to her.

"But you must get these tests made in order to be sure that the patient hasn't serious disease." Often neuroses and particularly hysteria must be recognized almost at a glance or after only a few questions. Many patients look on us doctors as merely brokers for some laboratory girls and x-ray men. By our behavior we have brought this on ourselves. I say to the people "I have been seeing sick people almost every day for 45 years. Surely I ought to know many diseases at a glance just as you know whooping cough at a glance."

When a man is 50 he is not likely to have a text-book ecg. any more than he is likely then to have all his original head of hair.

Any number of gallbladders are being removed because a roentgenologist said they emptied slowly. So far as I know the only good reason for removing a gallbladder is that the patient is having colic, gas and attacks of bloating.

Many patients who are supposed to have coronary disease really have a fibrositic or arthritic ache in the thoracic wall. These people get stiff and sore when they rest a while and they get relief if they get up and walk around.

A burning felt only in the epigastrium and which does not move up under the sternum is a paresthesia in the skin. It has nothing to do with ulcer or any disease inside the abdomen.

A young woman who has an ache in the heart region extending down the left arm and drops things from her left hand, may play tennis, swim; it is not due to any disease of the heart.

A man, usually past 55, suddenly feels pain or a hot or a rending feeling in his thorax or abdomen, is "rushed" to a hospital and there told that he has had a heart attack. Ecg. normal, blood sed. rate low, subsequent wind is as good as ever. He has been slowed mentally, unable to work, is irritable and overemotional, and the spring has gone out of his step. He has had a tiny stroke. Make the correct diagnosis because usually the patient is never able to go back to work, may develop Parkinson's syndrome, and in the end he may show much mental failure due to the cerebral arteriosclerosis.

A woman of 50, who, seized by epigastric pain was "rushed" to a hospital and operated on by a good surgeon, expecting to find acute pancreatitis.

She went on having curious pain of which several good internists could not diagnose the causes. Much history taking revealed the fact that often pain came suddenly; "at times after I swallow, the food nearly runs back into my mouth two or three times before it passes on into my stomach." When the esophagoscope was passed, a carcinoma was found.

Commonly are normal gallbladders removed without benefit; a kidney is stitched up or many dilatations of the ureter done for a stricture. Often if one asks if distress is all up and down the side the answer is: "Oh, yes, I am achy and sensitive on that side from my head to my foot." Nearly always unhappiness or worry or strain or an unfortunate marriage is the explanation.

Ache in the abdomen at 5:30 that does not come when the person is away from home! Ask "Well, what is your wife like?" Some women get this ache when the husband's key goes into the front door.

Distinguish between vomiting and regurgitating. Regurgitation is 100 per cent functional, due to a hereditary predisposition, plus, perhaps, some nervous strain or unhappiness.

A temperamental nurse who on two occasions had had her abdomen opened for intestinal obstruction, was asked to describe in detail an attack. She usually vomited her head off for two or three days, no abdominal pain or bloating, a little yellow fluid and slime. I asked if she ever had migrainous headaches. She said, yes, she had had plenty of them when she was a girl. In recent years she had only the abdominal storms in an exaggerated form. Asked if any painful psychic experience preceding the big storms which led to her operations, she said one came a day after she had gone to the church to be married and the scalawag hadn't shown up; the second a few months later when she, herself, left another man waiting almost at the church.

There is a type of bloating in which a patient gets to look as if she were seven or eight months pregnant. Usually the swelling goes down at night, without the passage of flatus. Most of these women have been operated on half a dozen times by the time a consultant sees them. Ask about psychic strains and unhappinesses. Roentgenogram shows no excess of gas in the bowel. Put the patient on her side and suddenly bring her knees up against her chin, usually the swelling almost or entirely disappears. It disappears in a moment if the patient is given a spinal or any anesthetic. A hypo. of morphine may achieve the result. The abdominal wall is being pushed forward by some sort of hysterical contraction of the muscles.

Fibrositic aches in the abdominal wall account for a lot of useless operating.



Our roentgenologists never make a diagnosis of spastic colon; they know that practically all colons are spastic, so why mention it? The patient never will come to any bad end because of the mucous colics. The term "colitis" should be kept for diseases in which the colon is inflamed or ulcerated.

Burnings in the abdomen are probably, without exception, functional.

All of us must vow that we will take even better and more careful histories, going into detail about everything that is important, will not jump to conclusions, and we will always cross-question the patient on details. We will avoid all attempts to practice "decerebrate" medicine, and to not take our diagnoses from the laboratory girl and the roentgenologist. Often the apparent abnormality revealed in the laboratory has nothing to do with the case; it is not responsible for the symptoms; they are due to unhappiness or a neurosis or mild psychosis.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### EXCELLENT OBSTETRICS TAUGHT BY A THOMSONIAN 1835-1841

A HISTORICAL note of great interest is contributed by a medical scholar<sup>1</sup> to the issue for September of a valued exchange.

Alva Curtis, while living in New Hampshire, had witnessed the life of a brother made miserable and cut short by the mercurial treatment so popular with physicians of the regular school. This caused him to reject the regular system of practice; later, about 1830, he embraced the tenets of Thomsonianism. After graduating from a New England academy, he went south in 1825 and became a teacher in a girls' school in Richmond, where he continued successfully for several years. When Curtis' support of the abolition doctrine lost him his position as a teacher, he tried to support himself in Richmond as a practitioner of the Thomsonian system of healing.

Ohio was in its period of rapid growth. Curtis, therefore, chose Columbus where he settled in 1834. Here, he took over the editorship of the *Thomsonian Recorder*; waged war on four fronts—with the regular physicians, with the Reformed-Botanicals and their medical school at Willoughby, with the homeopaths, and shortly with Samuel Thomson himself.

Curtis was far above the average Thomsonian in both education and ability. Soon he began to instruct students in his own house. In his efforts to obtain a charter for his school all those with whom he was at war opposed him, Samuel Thomson deprecating his conduct as being virtual apostasy.

1. Jonathan Forman, Columbus, in *Ohio Med. J.*, Sept.

Thomson insisted that those who bought the patent rights to practice his system of healing had the knowledge necessary to meet every situation.

Curtis wrote out his 18 "Lectures on Midwifery and the Forms of Disease Peculiar to Women and Children," which he delivered to his students at the Botanico-Medical School in the summers of 1835 and 1836; and published early in 1837.

An examination of the Curtis manual will reveal that he did an excellent job. He set out to give courage to those who must have believed the course of pregnancy to be a physiological process, childbirth to be a normal and safe procedure for healthy women. The Thomsonian could meet infection with his "steam-and-puke" routine as well as, if not better than, the regular with their huge doses of calomel. He was taught by Curtis to judge by external measurements, to keep his hands out of the vagina, to avoid forceps, and not to attempt to hurry the labor; to keep the midwife from pulling on the afterbirth, assuming that sooner or later all of it would come away.

### WHAT TO DO IN CASES OF PROLONGED LABOR

A SUMMARY of management of this important and frequently encountered condition as practiced by a Texas teacher<sup>1</sup> is this:

Maintain the fluid balance and prevent dehydration with at least 2,500 c.c. of fluid per day.

Give 30,000 to 100,000 Oxford units of penicillin intramuscularly every three hours as soon as the diagnosis of prolongation of labor is made.

Each night, when it is certain that delivery is not imminent, give ½ grain of morphine, 1/100 grain scopolamine, and 2 c.c. of 50 per cent solution magnesium sulphate intramuscularly.

Each morning stimulate the patient by the injection of one minim of posterior pituitary extract. The doctor must be in attendance and preferably should administer the drug personally. One-half hour later, a second dose of 1 or 2 minims, but never more, may be given. Further doses of 1, and not more than 2, minims of posterior pituitary extract are given at half-hour intervals. This may be repeated in the early afternoon, but not more than two courses in any day.

No operative measures are to be taken until the cervix is fully dilated and retracted.

Administer 10,000 to 20,000 Oxford units of penicillin to the child after it is born.

Sedate each evening, because it relaxes the uterus, augments its blood supply, and thus improves the oxygenation of the fetus. Any human can better face the day after a night of rest.

In a series for 1947 and 1948, 74 women had prolonged labor due to uterine inertia among 3,822

1. W. F. Mengert, Dallas, in *J. Iowa Med. Soc.*, Jan.



deliveries, the children weighing 1,500 or more gm. Forty-four of the cases of uterine inertia occurred in first labors, eight in second, five in third, seven in fourth, four in fifth, one each in 6th, 7th and 8th, and three in 9th. There were no maternal deaths. Three children died, one prior to birth and two immediately thereafter. Intrapartum fever in three women, and puerperal endometritis in 10. Two women suffered a hemorrhage of 600 or more c.c. and four had retained placenta; 46 (62%) had spontaneous delivery, 17 low-forceps and eight mid-forceps operations, and three were delivered by the breech. There were no cesarean sections. Three women had Dührssen's incisions of the cervix, and oxytocics to stimulate labor used in 11 of the 74.

Prolonged labor is a situation which can not be improved by any drastic means and must therefore be accepted with equanimity, and managed with patience. Two measures recently introduced have greatly lessened both the maternal and the fetal dangers of uterine inertia. These are (1) the administration of penicillin throughout the course of the labor, and (2) stimulation of the uterus by the cautious, judicious use of minute doses of posterior pituitary extract.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### GANTRISIN IN THE TREATMENT OF URINARY INFECTIONS

THE DEVELOPMENT in recent years of new potent agents for the treatment of infections has been so successful as to astonish as well as gratify patients and their doctors. The promise or hope in each new drug cannot, however, be properly evaluated unless physicians first learn where it can be expected to be of value, how it should be used and why that particular agent in any given situation. In addition, the toxicity of the drug must be determined in order to weigh the disadvantages against the advantages of its use.

A study has been made<sup>1</sup> of the sensitivity of various organisms to Gantrisin, both in vitro and in vivo, and from this investigation, the following conclusions are drawn.

Gantrisin is the drug of choice in the treatment of urinary infections due to *Proteus*.

It is effective in the treatment of urinary infections due to *Escherichia coli*, *Alcaligenes* and certain intermediate organisms.

It is moderately effective in infections caused by *Aerobacter* and *paracolon bacillus*.

Gantrisin, when given in therapeutic doses—2 Gm. orally every six hours or the intravenous or intramuscular injection of 40 per cent solution—

1. Grayson Carroll et al., St. Louis, in *Jl. A. M. A.*, Jan. 14th.

does not produce any local or systemic toxic reactions.

The concomitant use of alkali or forced fluids is not necessary.

Supplies of gantrisin were available for this study by Dr. M. J. Schriffrin of Hoffmann-LaRoche, Inc.

### THE FATE OF THE FORESKIN

AMONGST the Western nations the circumcision of infants is a common practice only with the English-speaking peoples. Wide variations exist as between different districts and between different social classes.

A Britisher<sup>1</sup> has very unorthodox, but sensible views on the subject, which he sets forth, with the reasons.

It is often stated that the prepuce is a vestigial structure devoid of function. However, it seems to be no accident that during the years when the child is incontinent the glans is completely clothed by the prepuce, and that meatal ulcer is almost confined to circumcised male infants.

An average figure for the whole country is a conservative estimate of 20 per cent.

Circumcision, like any other operation, is subject to the risks of haemorrhage and sepsis, and where a general anaesthetic is employed, to the risk of anaesthetic death. Deaths in children attributed to circumcision in England and Wales for 1942-1947 were 95.

Enuresis, masturbation, habit spasm, night terrors, or even convulsions have from time to time been attributed to phimosis, and circumcision has been advised. No evidence exists that a prepuce whose only fault is that it has not yet developed retractability can cause symptoms.

Only 10 per cent will fail to attain normal retractability by the age of three years; of this 10 per cent of three-year-old boys, in most it will be found a simple matter to render the prepuce retractable by completing its separation from the glans by gentle manipulation. In a very few this may prove impossible and circumcision might then be considered a justifiable precaution. Higgins (1949), with long experience of paediatric urology, also concludes that circumcision should not be considered until "after the age of, say two to three years."

As the boy grows up he should be taught to keep his prepuce clean himself, just as he is taught to wash his ears.

1. Douglas Gairdner, in *British Med. Jl.*, Dec. 24th.

PEPTIC ULCER IN INFANCY AND CHILDHOOD.—Three cases of peptic ulcer are reported,<sup>1</sup> the ages of the patients at onset being 5 days, 4 days, and 7 years. Cases 1 and 2 proved fatal—the first on the 5th, the second on the 23d day of life.

1. R. B. Tudor, Bismarck, in *Minnesota Medicine*, Jan.

## DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

### BACTEREMIAS FOLLOWING SURGICAL PROCEDURES IN THE ORAL CAVITY

THE INCIDENCE of transient bacteremia following dental extractions and periodontal scalings was studied in 221 cases. In the opinion of the investigators,<sup>1</sup> the results obtained justify certain conclusions which are herewith stated.

The incidence of dental bacteremias was considerably less than that previously reported by other investigators. The overall incidence of 10 per cent differed significantly from the 40 per cent incidence obtained by combining the results previously reported. One positive blood culture was found among 56 single extractions, and 16 positives among 92 cases of multiple extractions.

Bacteremias, when they occurred, were of very short duration. In the majority of cases, bacteria were detected *only within the first minute* following completion of the operation.

The age of the patient, the amount of operative trauma, and the number of teeth involved in the operation exerted definite influence on the incidence of bacteremia. Bacteremias occurred more frequently in patients below the age of 30 and above the age of 60 than in patients aged 30 to 59. The incidence was greater when moderate or extensive trauma had been inflicted, than when the trauma was trifling or slight. Significantly greater numbers of cases of bacteremia occurred following extraction of two or more teeth than following extraction of a single tooth.

Variations in tooth mobility and vitality and the presence of periodontal disease or apical infection did not appear to influence the incidence of bacteremia.

1. J. P. Lazansky *et al.*, Boston, in *Jl. Dental Research*, Dec.

### PENICILLIN OINTMENT

A STUDY made by teachers in the Dental Department of Temple University elicited information of value to doctors of dentistry and of medicine alike.

Carboxymethyl cellulose with petrolatum is a suitable vehicle for the topical application of penicillin in the treatment of Vincent's infection and similar infections of the oral mucosa. It should contain 10,000 units of crystallin penicillin per gram.

The base alone has no antibacterial properties, but is not toxic and is compatible with crystallin penicillin. It can be safely stored at room temperature for at least seven months.

The ointment will remain *in situ* for several hours, i.e., longer than necessary to exert its antibacterial action.

Its use does not obviate the necessity of proper prophylactic care in these cases.

1. J. T. Rothner *et al.*, Philadelphia, in *Jl. Dental Research*, Dec.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### ENURESIS

From *Physicians' Bulletin* (Jan.-Feb.), Eli Lilly & Co.

THE essence of an article which commends itself, because it is sensible and because it does not claim to cure in every case, is herewith reproduced.

Training for bladder control should be started at one year of age. The diaper is not worn during waking hours of the day. The infant is placed on his toilet and encouraged to urinate at regular intervals—on awakening, after each meal, and at intervals in-between for every three hours at first and less often as bladder capacity and control permit. It is important that the training not become a disagreeable ordeal, nor a time for participating in unusually pleasant play. By the age of two years, most children will notify attendants of their desire to urinate. At this time, the diaper may be removed during daytime naps, with appropriate encouragement to the child to remain dry. When the child has an occasional dry night, he should be awakened four or five hours after going to bed and placed on the toilet. If wetting occurs later in the night, it may be necessary to repeat this procedure half an hour before it usually happens. Moderate praise for dry nights and no comment about failures are an important part of the program.

The parents should be urged to assume an attitude of calmness toward the condition. The parents should be told that the child is not primarily at fault and that the abnormality probably was inherited from one of them. Conversations with the child are directed toward reducing nervous tension, promoting self-confidence, and correcting feelings of hopelessness, shame and guilt. A system of rewards is sometimes effective. A chart may be devised on which the dry and wet nights are designated.

Fluid intake may be reduced in the late afternoon and a dry supper given provided the child's coöperation can be obtained willingly. Depending upon the frequency of wetting, the child is fully awakened one or more times during the night to urinate. Tea, coffee and other caffeine should be denied.

Belladonna or atropine, given orally, three or four times daily, in gradually increasing amounts until the enuresis is relieved or until flushing of the skin, dry mouth, or mydriasis is produced, helps in many cases. Maximum doses for children three to six years of age average 1/300 to 1/250

grain. Treatment is continued for two months after voluntary control is established. Ephedrine increases tone of the bladder sphincter. It is given at bedtime, beginning with  $\frac{1}{4}$  to  $\frac{1}{2}$  grain, and is increased up to tolerance. Older children have been given as much as 5 grains. If stimulation of the central nervous system is excessive, barbiturates should be used to obtain sleep. Amphetamine, 5 to 25 mg. daily at bedtime, is of value in some cases.

Should simple measures fail, detailed urologic examination, including cystometry, is in order. Many of these cases will gain control of micturition by repeated treatments with the cystometer. Others may require correction of urologic defects.

Conditioning the patient to awaken at the stimulus of a full bladder has been used successfully. A sensitive relay is connected to a low-current electric circuit with two electrodes in a pad on which the patient sleeps. The circuit is so arranged that a very small amount of urine will activate the relay without giving an electric shock. The relay closes a second circuit which rings an alarm bell. The operation of the device is explained to the patient, who is instructed to arise and go to the toilet as soon as the bell rings. In a group of 30 selected enuretic children ranging in age from three to thirteen years, the condition was remedied in every instance within four to eight weeks. The method is not deemed suitable for highly neurotic and psychotic children and is of no value in the presence of organic illness or uncorrectible situations which produce emotional tensions. It has been used successfully in the hospital and the private home.

#### THE PATIENT WITH FATIGUE AND NERVOUSNESS

COUNSEL all of us need to apply every day is offered by Williams.<sup>1</sup>

It is generally believed that one-third to two-thirds of all patients who seek medical help have as the most significant cause of ill health an emotional or neurotic disturbance. Fatigue and nervousness are the commonest symptoms of these disturbances.

The diagnosis of these conditions should be made, not on the basis of exclusion, but on the basis of positive evidence supported by symptoms characteristic of them.

The three principles in the successful management of nervous and exhausted patients are, first, convincing the patient that the diagnosis is correct; second, improving or relieving the patient's symptoms; and, third, keeping the patient largely symptom-free and preventing relapse once improvement has occurred.

Carrying out these principles demands skill in the art as distinguished from the science of medi-

cine. It can be carried out by most understanding physicians by means of an accurate diagnosis, adequate explanation of the situation to the patient, psychotherapy, symptomatic therapy and such special measures as are necessary.

Common sense, an understanding of human nature and of the effects of various stresses and of emotional conflict on the individual, applied with sympathy, cheerfulness and hopefulness are extremely effective in treating these patients.

Occasionally, for patients difficult to treat, the aid of a psychiatrist is helpful.

Note carefully how different is the last paragraph from most statements from those who advise as to care of those whose disturbances are chiefly emotional or neurotic. Only occasionally is the aid of a psychiatrist helpful. For the vast majority of patients in this class, as of patients generally, the services of the general practitioner, for diagnosis and for treatment, are adequate.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### A LITTLE PRAISE GOES A LONG WAY

AS A YOUNG BOY growing up, my grandmother told me, "Politeness never hurt anybody." In the hospital world, we are confronted many times with most trying circumstances and often put at our wits' end to know how to handle the varied and complicated personnel problems.

The hospital that is departmentalized is probably as difficult to run as any other, because all departments in the hospital must be supervised by someone who is gifted in pouring oil on troubled waters and at the same time exercising the proper disciplinary power. Some good administrators have adopted the vicious habit of using a lot of profanity, thinking that this creates a fear complex in the employee. Others give way to fits of temper for the same reason, and still others mope around and refuse to contact inert employees, thinking maybe that will produce results. There may be some virtue in all of these; at times I have seen all of them work admirably. The mistake that is often made is that the wrong remedy is used on the person to be disciplined. When that is the case, you have failed before you get started. There is little hope of creating uniform opinions, uniform ideas and uniform desires in any large group of individuals.

The best hospital administrator is he who can find the wrench to fit the tap that is loose. This is by no means an easy job, especially since loose taps have a way of changing their calibre under different circumstances. The sensitive, timid nurse will be tremendously affected if an explosion of profanity precedes her reprimanding; the callous

1. D. L. Willmar, San Francisco, in *J. A. M. A.*, Dec. 24th.



orderly will probably pay no attention to the profan ty. Then, again, the circumstances might alter the case in such a way that the orderly be the sensitive party and the nurse the callous one. If the books are out of balance, a burst of temper with harsh words about inability and carelessness might mean for your bookkeeper a restless night. The night fireman might come in drunk. To sit down and talk with him while he is intoxicated using soft words and a pleading manner is probably a waste of time. Well, then, what is the best remedy or best *modus operandi* for running a hospital so far as personnel is concerned?

This matter of operating a hospital, satisfying the personnel, patients and public, is a man-size job. It requires diligence, honesty, sobriety, tact, and long-suffering. If, however, the two means, politeness and praise, are used daily, in great quantity, and to every employee, patient, or relative, one's difficult assignment becomes tremendously easier to accomplish. Everyone likes to be noticed; everyone likes to be spoken to. About the most unhappy individual in your whole institution is the one the fewest people speak to each morning. The author can conceive of no better way to *persecute* a member of the organization than that of completely ignoring him. The next condition that promotes happiness, contentment, and thoroughness on the job is that of praise. If a scrub boy shines the door-knob nicely the administrator would do well to tell him so. If the maid is polite and courteous to a patient while cleaning the room, the housekeeper will do well to tell her so. If the cook shows special interest in new recipes for preparing food, the dietitian would do well to give her a little word of praise. If the office manager is particularly courteous to a disgruntled patient complaining about her bill, it would be wise if the administrator would take notice and tell her of her tactful habits. If the operating room supervisor stays on long after she should have been off because of an emergency, recognition should be made of this and she should be commended for her cheerfulness on the job.

To recapitulate—while there is no panacea for the multiplied ills that arise in the personnel of a hospital, there are two words that will fit every case, make everybody feel better, and result in better and more cheerful services on the part of each employee. Those two words are "politeness" and "praise."

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DIZZINESS and VERTIGO should not be used interchangeably. Dizziness or giddiness is a sensation of unsteadiness with a feeling of movement within the head. With vertigo, the environment seems to spin (objective vertigo), or the body to revolve in space (subjective vertigo). Labyrinthine disturbances are likely to cause a sensation of rotation.—K. M. Simonton, Rochester, Minn., in *Ariz. Med.*, 1949.

## HISTORIC MEDICINE

### AUTHORS AS PSYCHOPATHS

LEST the reader should think the author<sup>1</sup> exaggerates the relationship between mental instability and great literature, a list is furnished of some great writers who were either insane, certifiable, or though perhaps never certifiable, were cyclothymes, schizophrenics, obsessionals, psychopaths, alcoholics, or drug addicts. On this list may be found the names of the author's fellow-countrymen: Beddoes, Blake, Boswell, Bunyan, Burns, Byron, Chatterton, Clare, Coleridge, Collins, Cowper, Crabbe, DeQuincey, Dickens, Donne, Gray, Johnson, Lamb, Rossetti, Ruskin, Shelley, Smart, Swift, Swinburne, Tennyson and Francis Thompson. And he adds a few from other nations: Baudelaire, Dostoevsky, Flaubert, Goethe, Gogol, Holderlin, Nietzsche, Poe, Rimbaud, Rousseau, Strindberg, Swedenborg and Verlaine.

A few of this number are dealt with in some detail.

John Donne (1757-1631) is one of the strangest figures in English literature—the Catholic who died Dean of St. Paul's, the poetical amorist who became the author of the Holy Sonnets. His influence upon English poetry can still be traced. Dr. Johnson thought his metaphors far-fetched and at times indelicate. His eloquence as a preacher and his preoccupation with the fate of the body after death drew crowds of fascinated hearers, and this perennial theme came so to possess him that the last events of his life seemed a drama in which he was ready at length to act the part he had so often rehearsed. For, he wrote,

Since that I  
Must dye at last, 'tis best  
To use my selfe in jest,  
Thus by fain'd deaths to dye.

His *Devotions Upon Emergent Occasions*, written during a serious illness in 1623, include:

"The first alteration, the first grudging of the sickness. . . . The patient takes to his bed The Physician desires to have others joynd with him. The King send his own Physician. Upon their consultation they prescribe." Then follows the treatment—cordials and pigeons—but "the Sickness declares the infection and malignity thereof with spots. . . . I sleep not day nor night. . . . From the Bells of the Church adjoining I am daily remembered of my burial in the funerals of others. Now this Bell tolling softly for another, saies to me, 'Thou must die.' But 'at last, the Physicians after a long and stormie voyage, see land.' They proceed to purge, the patient recovers, but he is warned of 'the fearful danger of relapsing.'"

Donne could never long avert his mind from the thought of the body's dissolution. Here is one such passage in his magnificent prose from his last ser-

<sup>1</sup> W. R. Brain, in *British Med. J.*, Dec. 24th.



mon, preached before King Charles I. "That Monarch, who spread over many nations alive, must in his dust lie in a corner of that sheet of lead, and there, but so long as that lead will last; and that privat and retir'd man, that thought himself his owne for ever, and never came forth, must in his dust of the grave see published, and (such are the revolutions of the graves) bee mingled with the dust of every highway and every dunghill, and swallowed in every puddle and pond."

Of this sermon, "Many that saw his tears and heard his faint and hollow voice," says Isaak Walton, "thought that Dr. Donne had preached his own funeral sermon."

Dr. Simeon Foxe, his physician, urged him to arrange for a monument to be erected to him in his cathedral. Donne agreed on condition that Dr. Foxe should not interfere in any way with the character or form of the memorial. Here is Walton's account of what followed:

"A monument being resolved upon, Dr. Donne sent for a carver to make for him in wood the figure of an urn, giving him directions for the compass and height of it; and to bring with it a board of the just height of his body. These being got, then without delay a choice painter was got in readiness to draw his picture, which was taken as followeth:—Several charcoal fires being first made in his large study, he brought with him into the place his winding-sheet in his hand, and having put off all his clothes, had this sheet put on him, and so tied with knots at his head and feet, and his hands so placed as dead bodies are usually fitted, to be shrouded and put into his coffin or grave. Upon this urn he thus stood, with his eyes shut, and with so much of the sheet turned aside as might show his lean, pale, and death-like face. . . . In this posture he was drawn at his just height, and when the picture was finished he caused it to be set by his bedside, where it continued and became his hourly object till his death, and was then given to his dearest friend and executor, Dr. Henry King, then chief Residentiary of St. Paul's, who caused him to be thus carved in one entire piece of white marble, as it now stands in that Church."

Jonathan Swift (1667-1745) could claim distinction as politician, Dean of St. Patrick's, and satirist. In 1701 Swift, then 34, invited to live near him in Ireland two ladies—Esther Johnson, aged 20, "Stella;" and her older companion Rebecca Dingley. Till the death of Stella in 1728 Swift remained on terms of affectionate friendship with both of them, writing to them when he was absent letters which included messages couched in the language of the nursery. This strange relationship was complicated by the intrusion of another woman, Esther Vanhomrigh, "Vanessa," who fell in love with him.

Why did Swift never marry Stella? There seemed to be only two possible explanations: either he did marry her, but concealed the fact, or there was an external barrier to their marriage. They were, it has been suggested, uncle and niece, or half-brother and half-sister. "The greatest difficulty that occurs

in analysing his character," wrote Johnson, "is to discover by what depravity of intellect he took delight in revolving ideas, from which almost every other mind shrinks with disgust." One does not need to be a Freudian to see that Swift was emotionally arrested at an infantile stage of development. Swift was broken-hearted when Stella died. He lived on to die demented, after a period of melancholia, nearly 20 years later.

Samuel Johnson (1709-84) is generally regarded as a monument of British common sense—a kind of intellectual John Bull, dogmatic, tough, and rather insensitive. This is only half the truth, the superficial half, for beneath his assured demeanour lay a torment of apprehensiveness, doubt, and misgiving which found expression in great eccentricity of behaviour.

Johnson's gestures in the street "attracted the notice of the many, the stare of the vulgar, but the compassion of the better sort." But the manoeuvre that used the most particularly to engage the attention of the company was his stretching out his arm with a full cup of tea in his hand, in every direction, often to the great annoyance of the person who sat next to him, indeed to the imminent danger of their cloaths; sometimes he would twist himself round with his face close to the back of his chair and finish his cup of tea, breathing very hard.

He had a practice of touching posts in the street and going back when he had missed one to repair the omission. It is clear today that Johnson's movements were of psychopathic origin. He knew this himself, for when a Miss Hunter asked him: "Pray Dr. Johnson, why do you make such strange gestures?" he replied, "From bad habit." He was also obsessed with a sense of guilt. As Mrs. Thrale put it "He . . . filled imagination with fears that he should never obtain forgiveness for omission of duty and criminal waste of time."

James Boswell (1740-95) was a cyclothyme, subject to the characteristic alternations of elation and depression, and no doubt it was this inherited psychopathic trait which brought his brother and his daughter to actual insanity. According to Dr. Hubble: "Whenever James was in the company of Auchinleck the image of himself dwindled until it was no larger than a small boy, beloved and indulged by his mother, but intimidated by the stern and sarcastic tongue of Alexander Boswell." The effect of this conflict was to send Boswell in search of a father substitute who should be great and good, and one such was Johnson.

If Boswell was in search of a father, Johnson was looking for a son, and the psychological wonder was that these two great eccentrics exactly suited each other.

The eighteenth century produced several mad poets: Collins, Smart, Cowper, and Clare—who just comes into it—all became insane. Smart is unique in that his poetry was improved by his madness. The miracle that so much puzzled Browning occurred—he wrote *A Song to David*. The flea for a time became an eagle.

Charles Dickens (1812-70) was the victim of cyclothymia and his sado-masochism.

In one novel, *A Tale of Two Cities*: Dr. Manette spends years in the Bastille; Charles Darnay is on trial for his life; Jerry Cruncher pursues the grim trade of a resurrectionist; the Marquis de St. Evremonde carelessly runs over and kills a child, and is himself murdered in revenge. His brother has raped the sister of Mme. Defarge and killed her brother, as a result of which their father died of a broken heart. Scenes of revolutionary violence dominate the story; the Bastille is stormed and the guillotine falls incessantly. Finally Mme. Defarge is shot and killed by Miss Pross, and Sydney Carton and the little sempstress, both innocent, are executed together. There is almost as much violence in *Barnaby Rudge*, in which the Gordon Riots take the place of the French Revolution, and the sack-ing of Newgate corresponds to the storming of the Bastille. In this tale execution is personified in Dennis the hangman; often beheading figures in Sam Weller's jokes. The large part played by prisons in Dickens's stories is significant. A more personal and refined kind of cruelty is exemplified by the behaviour of the Murdstones to *David Copperfield*, Squeers to the boys at Dotheboys Hall, and Quilp to his wife.

One of Dickens's favourite recreations in Paris was to visit the Morgue. He went to public executions at home and abroad. In *Oliver Twist* Bill Sikes murders Nancy.

"Clear'y, no man is a great creative artist because he is a psychopath, but our subjects surely show that, given the necessary qualities of mind, more than one process which the psychiatrist calls pathological may be an essential element in the virtues of genius—and perhaps of the rest of us," is the conclusion of the essayist, and with this conclusion few will be disposed to disagree.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### ABNORMALITIES OF THE THYROID GLAND

Cysts and fistulas of the thyroglossal duct tract are fairly common. In spite of this frequently they are not recognized, and accordingly are improperly treated. In a recent review of this condition Ward and his associates have brought out a number of

important points.

Inasmuch as they arise from epithelial rests in the remnants of the thyroglossal duct produced by the descent of the thyroid anlage, they are situated in or near the midline between the foramen caecum at the base of the tongue and the pyramidal lobe of the thyroid gland. The authors call attention to the fact that they frequently occur on either side of the midline. The most common site of occurrence is anterior and inferior to the symphysis of the hyoid bone to which it is firmly attached, this point being of aid in diagnosis.

These cysts and fistulas are often subject to recurrent inflammatory changes, and frequently become infected. Under such conditions they may be troublesome in a number of ways, among which are disfigurement, pain, a discharging sinus, difficulty in breathing, and a spreading infection.

Definitive treatment consists of excision of the cyst or fistula and the remaining epithelial tract to the foramen caecum of the tongue. In case of infection preliminary incision and drainage may be necessary. A common mistake is to excise the tract to the hyoid bone. This results in a large number of recurrences. The most satisfactory procedure is to include in the excision the symphysis of the hyoid and the block of soft tissue between it and the foramen caecum. In this location the tract is often too small to be recognized, and only in this way can it be removed. The operation should be done through one, or even two or three horizontal incisions preferable to a vertical one.

Ward, G. E., et al.: *S. G. & O.*, 89:7-7, 1949.

#### (THROMBOSIS From Page 38)

Despite the fact that several reported cases of mesenteric thrombosis have been treated with anticoagulant therapy with recovery (Luke<sup>5</sup> and Engelman<sup>6</sup>), there are cases reported with fatal outcome without the advantage of anticoagulant therapy.<sup>7</sup> We believe that in early cases, or cases in which on exploration no nonviable bowel is found, resection is contraindicated and anti-coagulant therapy is the treatment of choice.

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STATISTICS indicate that annual cost per student of Western Reserve University Medical School is \$3,237.—*Ohio State Med. J.*, Dec.

## PEDIATRICS

ALBERT M. EDMONDS, M.D., *Editor*, Richmond, Va.

### TREATMENT OF ACUTE RHEUMATIC FEVER AND PREVENTION OF RECURRENCES

Abstracted from article by R. L. Jackson, in *Jl. A. M. A.*, October 15th, 1949.

#### EMOTIONAL CARE

THAT SEVERE ANXIETY affects the various physiologic functions of the child is well known. The musculature may be under tension leading to unnecessary expenditure of energy and so to excessive fatigue; low mood may result in poor appetite; unresolved anxiety may lead to terror dreams and restless sleep. Attention must be paid to the basic sources of anxiety.

#### REST

During the acute stage of the disease the child's most urgent need is complete rest in bed. To attain this much more is required of a hospital than a clean bed, quiet sunny surroundings, a daily bath with tepid water, and controlled temperature and humidity. The child also needs to realize that he is in a good place where everyone is interested in him, and that his family wants him to be in the hospital.

#### NUTRITION

The nutritional care of the child with rheumatic fever is extremely important. In working out a diet one must keep in mind not only the child's nutritional needs but also his physical condition and his food likes and dislikes. The child should participate in the selection of food, and the food should be prepared and offered in such a way that his participation is educational and the mealtimes are pleasant. Under such a regimen mealtimes can become an interesting project rather than a tiresome routine which may result in serious feeding problems.

The diet should be low in fat because of the anorexic effect of fat and the inability of sick or malnourished children to absorb it well, high in protein because the patient is in a state of protein depletion and the sick or malnourished child's ability to absorb and utilize protein is good. Carbohydrate foods are well utilized and afford the easiest means of maintaining an adequate caloric intake.

The mineral requirements are met best by providing 1 quart of skimmed milk and 10 to 15 mg. of iron either in the foods or as inorganic salts.

The intake should include at least 5,000 units of vitamin A and 400 units of vitamin D. The child should receive daily at least 100 mg. of ascorbic acid, preferably in foods. In the more acute phases, preparations of the vitamin B complex

should be given to about double the optimum for normal persons.

#### THE SALICYLATES

Only the salicylates have survived the test of time in the treatment of rheumatic fever. Salicylates have analgesic and antipyretic action, but few believe they modify the progress of the disease. Tremendous interest has been aroused by Coburn's report that by means of massive doses of salicylates cardiac sequelae could be modified if a level of blood salicyl (measured as salicylic acid) above 350 micrograms per c.c. were maintained.

Numerous reports of salicylate poisoning of children with rheumatic fever have appeared in the literature since higher doses began to be employed. Hyperpnea, anorexia, apathy and lassitude are the important early signs. Hyperventilation is believed to result from a disturbance of the respiratory center and causes respiratory alkalosis.

Dubow and Solomon have recently studied salicylate tolerance and toxicity in children and have found that sodium salicylate given in divided doses over a 24-hour period (0.85 grain [0.05 Gm.] per pound of body weight) resulted in therapeutic blood levels without toxic symptoms and with normal serum carbon dioxide content and pH values. Acetylsalicylic acid gave slightly higher blood levels than the sodium salt. Salicylates were found to be tolerated less well by acutely ill than by mildly ill or convalescent children. When physiologic function was deranged, even small doses resulted in very high blood levels. Adequate fluid intake and renal function were major factors in preventing retention of the drug.

Hypoprothrombinemia induced by salicylate was first demonstrated by Link et al, who fed a salicylate to rats deficient in vitamin K, and many of the animals so treated died with hemorrhagic manifestations. In recent studies similar effects were produced in humans, even though they had shown no previous vitamin K deficiency. Meyer and Howard reported that vitamin K will protect completely against the reduction of prothrombin if it is given in conjunction with salicylate. Shapiro estimated that 1 mg. of synthetic vitamin K will counteract the prothrombin-reducing action of 1 Gm. of acetylsalicylic acid.

In the author's experience children have tolerated acetylsalicylic acid well. It has not been necessary to use sodium bicarbonate to prevent gastric irritation. The present policy is to use acetylsalicylic acid in the amount of 0.7 grain (0.04 Gm.) per pound of body weight, in six doses, each 24 hours, and to make blood studies if symptoms or signs of intoxication are noted.

#### ENDOCRINE THERAPY

A steroid isolated from the adrenal cortex (compound E [17-hydroxy-11-dehydrocorticosterone])



and the adrenocorticotrophic factor isolated in relatively pure form from the anterior lobe of the pituitary gland have been administered to a small group of children with acute rheumatic fever within the present year. A preliminary report was recently published by the Mayo group. So far as the author knows, only 16 patients with rheumatic fever have been observed during and following the administration of either the adrenal steroid or the pituitary adrenocorticotrophic factor. The dramatic response of the patients offers bright hope.

In each of the 3 patients with acute rheumatic fever observed by Hench et al the administration of the adrenal cortex factor, compound E, or the pituitary adrenocorticotrophic factor, was followed by the rapid disappearance of fever, tachycardia and polyarthritides, also of the abnormal plasma protein patterns, the elevation of sedimentation rates and the electrocardiographic changes. "In view of the markedly beneficial effect of compound E on the skeletal muscles and fibrous tissues of patients with rheumatoid arthritis, it may be hoped that compound E will exert a similar effect on the cardiac muscles and fibrous valves in rheumatic fever."

#### DIGITALIS

Controversy continues as to whether digitalis produces more toxic than therapeutic effects for the failing heart of the child with acute rheumatic carditis. In the author's opinion and experience there is more evidence to support than to condemn the use of digitalis during impending or definite heart failure.

A standard powdered leaf, 8 mg., or digitoxin 0.008 mg., per pound of body weight, for full digitalization. Half the calculated amount is given for the first dose, the remainder in four doses over the remainder of the 24-hour period. The maintenance dose is  $\frac{1}{4}$ th of the digitalizing dose each day in two parts, the dosage adjusted according to the response and repeated ecg. tracings.

#### OXYGEN THERAPY

Oxygen is of definite benefit to the child with rheumatic pneumonitis or congestive heart failure. It should be given early and as long as the respirations are labored. The method of administration will depend on the facilities at hand.

#### DIURETICS

Diuretics are indicated when there are signs of heart failure. The mercurial diuretics have been most effective in the author's experience.

#### OTHER DRUGS

Neither chemotherapeutic drugs nor antipenicillin are effective during the active phase of the disease. There is evidence that sulfonamide drugs given during the active phase may cause exacerbations. Penicillin has no effect on the course of the disease, so would be preferred to any sulfon-

amide in the treatment of a superimposed bacterial infection.

The author has had no experience with other drugs which are being studied as possible substitutes or salicylates.

#### GENERAL CARE

When the disease becomes subacute, or is in the fourth phase, the child will require weeks or months of convalescent care best in a sanatorium with facilities to meet the physical, emotional, intellectual and spiritual needs of the child—before resuming physical activity. The child who has spent his subacute phase in a convalescent home or ward after he has proved that he can endure limited physical activity without any signs or symptoms of cardiac embarrassment is ready for home care. The family is instructed to have the child go to bed if there is any sign of infection, and to consult the family physician as early as possible. If another member of the family has a cold, sore throat or any other infectious disease, the child is to be kept away from that person and the family physician notified. The child is to play with other children in the normal way, but is to avoid fatigue. Psychologic advice is given to prevent overprotection.

A number of clinics have reported successful sulfonamide prophylaxis of recurrences, the rate of major episodes for those who have received this prophylaxis being 1.5 per cent. The number of toxic reactions show the sulfonamides to be by no means harmless. In addition to the toxic and allergic reactions excited by chemotherapeutic or antibiotic agents, there is also the danger that the host may lose his ability to resist the organism and also that the bacteria may become resistant to these drugs.

It is the author's opinion that sulfonamide prophylaxis is indicated only for those children recovered from rheumatic fever who have definite rheumatic heart disease, and who do not have a good diet and fair general care. It is possible that oral penicillin may prove to be safer and as effective as sulfonamide compounds in prophylaxis.

#### ZEAL FOR "EQUALITY" REALLY AN ENVIIOUS, MALICIOUS HATRED

From an Editorial in *Jl. Okla. Med. Assn.*, Dec.:

Nearly 100 years ago the socialistic trends of our government were thus accurately described by Henri Frederic Amiel:

"The modern leveler, after having done away with conventional inequalities, with arbitrary privilege and historical injustice, goes farther, and rebels against the inequalities of merit, capacity, and virtue. Beginning with a just principle, he develops it into an unjust [even absurd] principle. Inequality may be as true, as just, as equality; it depends upon what you mean by it. But this is precisely what nobody cares to find out. The modern zeal for equality is a disguised hatred which tries to pass itself off as love."



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## FALSE COLONIC OBSTRUCTION

A NUMBER of cases of large-bowel obstruction of which none of the usual causes could be demonstrated at operation have recently been reported. Some medical men consider this to be a new clinical entity. Macfarlane and Kay<sup>1</sup> have recently had three cases of large-bowel obstruction which clinically resembled those reported by Ogilvie and others, but which differed from them in their operative findings.

A man, 59, was well until one year before admission, when he had a coronary thrombosis. He was treated for this in another hospital for six weeks. Following this he began to experience increasing constipation, fullness of his abdomen, occasional cramp-like pains in the epigastrium, loss of appetite, and some vomiting. These symptoms became more severe; for the four days before admission bowels had not moved, the abdomen had become more distended, vomiting occurred after each meal. During the next few days, in spite of a fair amount of flatus and faecal results from soap-and-water enemas, the abdomen remained distended and he continued to complain of cramp-like epigastric pains. Ecg. showed widespread myocardial degeneration but no evidence of infarct; barium enema revealed no abnormality.

Seen 12 days later: abdomen greatly distended, colicky abdominal pain. Increased peristaltic sounds were audible on auscultation. Rectal examination was negative. There seemed to be large-bowel obstruction, probably carcinoma. Laparotomy same day.

Through a right paramedian incision the terminal ileum, ascending colon, and transverse colon were found to be greatly distended; descending colon of normal size. No tumour could be felt. It was felt that somehow a ring structure had been missed. A transverse colostomy was performed. The colostomy was opened the next day, and though gas escaped there was no faecal result for five days. Thereafter it worked normally. Convalescence was marred by deep venous thrombosis of his right leg, but this was successfully treated with heparin.

As it was still thought that this patient had a carcinoma in the region of the splenic flexure a second laparotomy was done six days later. The abdomen was thoroughly explored, but no abnormality could be found. His colostomy was closed six weeks later. Following this the patient experienced occasional colicky abdominal pains, but his bowels moved regularly. When last seen 3½ months later he had no complaints.

A matron, 45, was admitted on February 24th, 1949. She had been well until September, 1948, when she had meningitis. Since that attack she has had attacks of dizziness and vomiting, more recently increasing constipation. During the week before admission she had colicky, lower-abdominal pains, with increasing fullness of the abdomen, anorexia and nausea, but no vomiting. Though her bowels had moved slightly during the past week there had been no passage of flatus.

Abdomen distended and diffusely tender, no rigidity, exaggerated peristaltic sounds. Enema gave no flatus or faecal results. A diagnosis of large-bowel obstruction was made and laparotomy was done on the 25th through a right paramedian incision. The caecum ascending colon, and transverse colon were moderately distended; the descending colon was collapsed. No abnormality could be detected between the distended transverse colon and the collapsed descending colon.

1. J. A. Macfarlane & S. K. Kay, in *British Med. J.*, Dec. 3rd,

Bowels moved spontaneously on the 4th day, and the distention rapidly subsided. Patient was discharged, at the end of three weeks; seen seven weeks later she had had no return of symptoms.

A 60-year-old man admitted June 4th, 1949. Three days previously he had colicky pains across his lower abdomen, increased, present on admission. There was complete constipation, and during the previous 24 hours he had been vomiting. There was nothing relevant in past history.

Abdomen distended, some tenderness in right lower quadrant. Borborygmi heard during a spasm of pain. Rectal examination was negative. The diagnosis of large-bowel obstruction was made, laparotomy on June 4th. Both large and small bowel greatly distended; in the region of the pelvic colon there seemed to be a ring of spasm, and below it the bowel was collapsed. The abdomen was thoroughly explored. No abnormality could be detected. The pelvic colon was again examined. The area of spasm had disappeared. Because of the pronounced distention a transverse colostomy was thought advisable.

The colostomy was opened the following day and began working shortly afterwards. The distention subsided only slowly. The patient improved and his condition gave rise to no anxiety. On the seventh post-operative day he suddenly collapsed, became pulseless and cyanotic, perspired freely, and died within a few hours. The physicians thought it either a pulmonary embolus or a coronary thrombosis. Necropsy was refused.

Evidence is offered suggesting that the cases of false colonic obstruction described recently in the literature are merely cases of spastic ileus. Three cases of idiopathic spastic ileus producing a picture indistinguishable from mechanical obstruction are described.

Accounts of these cases attracted my special attention because of puzzlement over two cases of my own seen in the past two years, both of which presented symptoms diagnostic of early intestinal obstruction.

In one case the diagnosis was confirmed by x-ray examination. At laparotomy the next morning nothing was found to account for the symptoms or the x-ray picture. The other case, that of a gentleman from a town in eastern Carolina, presented every symptom of obstruction except vomiting. Had a hospital bed been procurable he would have been sent in and been subjected to operation. Before I saw him he had telephoned home for two of his employees to come for him in a big car, and when they arrived he was suffering less, so departed, carrying a list of hospitals and surgeons along the route he was to follow. The patient got home all right, went to work the next day, and so far as is known to me, still has a scarless abdominal wall.

Before making another positive diagnosis of intestinal obstruction, I am going to see what effect a relaxant of involuntary muscle will have on the bedside findings, and the x-ray findings, if any.

#### FRESH LIGHT ON MALARIA

IT HAS BEEN established that *Plasmodium vivax* and *P. malariae* exist in man in five distinct forms

—the sporozoite, the preërythrocytic form in the liver, the schizont in the red blood corpuscle, the exoërythrocytic form in the liver, and the gametocytes in the red cells. *P. falciparum* appears not to develop the exoërythrocytic form, but is otherwise similar. The sporozoite is merely a transitional stage inoculated by the mosquito, wherein it changes into the preërythrocytic form, and it then multiplies in the body. The schizont, which produces the fever, seems to be a rather unnecessary phase in the protozoon's life history, except that gametocytes perhaps branch off from it to constitute the form infective to mosquitoes.

With the foregoing paragraph as a foundation a British medical editor<sup>1</sup> discusses today's treatment of the world scourge, malaria.

Within the limits of tolerated doses quinine, mepacrine, and chloroquine are effective against schizonts only, so they offer no prospect of radical cure of *P. vivax* infections. They are not true causal prophylactics, though when properly administered mepacrine (atabrin) and chloroquine may destroy the schizont so rapidly that clinical signs are suppressed; in consequence they appear to act as true prophylactics against *P. falciparum* infection and suppress the others. Proguanil has a wider range, acting on the preërythrocytic form of *P. falciparum* malaria as well as on the schizonts and gametocytes of all species. It is therefore a true causal prophylactic of *P. falciparum* malaria and a suppressant of *P. vivax* infections; it brings about a clinical but not a radical cure of *P. vivax* infections, and renders gametocytes non-infective to mosquitoes. The range of the 8-amino-quinolines—pamaquin, pentaquine, and isopentaquine—is still wider, for they have an observable effect on the preërythrocytic, schizogony, exoerythrocytic, and gametocyte stage.

The group last named is the only one from which there is a prospect of obtaining an efficient anti-malarial drug for the clinical cure, radical cure, and prophylaxis of all forms of malaria. The toxicity of these drugs makes them useless for the control of schizogony and its clinical effects, or for prophylaxis, and for other purposes strict medical control must be exercised over their administration. Recent reports indicate that isopentaquine has a maximum tolerated dose four times that of pamaquin, while weight-for-weight it is slightly more effective. It is, however, still too toxic to be of any use as a prophylactic or schizonticide, or to be taken except under medical supervision.

Progress in mosquito control has advanced to the stage when many doubt the place of mass therapy or drug prophylaxis in the protection of the civilian population except during epidemics, believing that the funds and administration needed

1. Editorial in *British Med. J.*, Oct. 22nd.

for them could more effectively be used in mosquito control.

Until some drug is discovered with the range of action of the 8-amino-quinolines *and without their toxicity*, a variety of drugs must be prescribed, according to the purpose of medication and the species of parasite concerned.

### DICOUMAROL EFFECTIVE IN MUCH SMALLER DOSES

#### NO NEED FOR SO FREQUENT BLOOD EXAMINATION

A BRITISHER<sup>1</sup> furnishes information which may be needed by any doctor at any time, that he may know how best to save a patient's life.

The new coumarin substance, B. O. E. A., is more quickly acting and in some ways safer than dicoumarol. What is the most effective and safest prothrombin level to aim at? How often is it necessary to estimate the prothrombin level? How dangerous are these anticoagulants?

A number of workers have aimed at a prothrombin level of 10 to 20 per cent of normal in the treatment of thromboses. Peters produced a level of 35 to 50 per cent and recorded good results. A case of lymphatic leukaemia is described with multiple mesenteric thromboses which ceased when the prothrombin level was kept between 60 and 70 per cent of normal by dicoumarol. Treatment was maintained for over three years, prothrombin estimations being made at monthly intervals.

During the last four years Scott has treated 81 cases of thrombosis by maintaining a prothrombin level of 65 to 75 per cent of normal, and the results have been as good as any of those recorded by the authors here quoted for similar cases. No haemorrhage has been observed. These authors have all recommended daily estimations of prothrombin level, and as their patients are constantly close to haemorrhage this was certainly essential. On the other hand, when one aims at a level of 65 to 75 per cent of normal, dosage can be adjusted to produce this level and maintain it, using the prothrombin estimation to confirm one's aim rather than as an essential in treatment. Estimations in these cases were never done more often than every five days; in prolonged treatment they were done once a month. The prothrombin level never fell below 50 per cent and never rose above 80 per cent. In 24 cases treatment has been continued for at least six months of the year for one to four years.

These cases have all been treated at home, but no case in which liver or renal damage has been found or suspected was given dicoumarol without more frequent prothrombin estimations.

Bingham et al. report that, after taking 10 g. of dicoumarol in 92 days, a man with thromboangitis obliterans had normal liver and renal function.

Scott's patients who took dicoumarol for six months during each of four successive years similarly showed no ill effect; their white and red cells remaining normal.

It is suggested, therefore, that a prothrombin level of 60 to 75 per cent of normal is adequate for the treatment of most cases of thrombosis; that prothrombin estimations in these circumstances are unnecessary more often than every five days in most cases; that dicoumarol and also B. O. E. A. given for a prolonged time are not harmful in correct dosage.

### ONLY COSTS INCURRED FOR PATIENT'S BENEFIT SHOULD BE CHARGED TO PATIENT

ONE of the most serious problems facing society in its fight with disease is the rising cost of hospital care. A situation is rapidly arising which threatens the continuation of the voluntary hospital. Requests are going forth from individual hospitals for increasing local, state and federal subsidies to prevent a breakdown in hospital finances, and the cost of hospital care for the individual is approaching prohibitive levels.

The hospital originally came into being<sup>1</sup> as the place where seriously ill people could be cared for in such a manner as to conserve man-power by communal care and to make essential expensive treatment equipment available to the sick. Under such an organization the costs of hospital operation were properly assessed against the patients, or, in the case of indigents, paid from government funds allocated for the support of the poor.

The hospital has steadily and sometimes rapidly evolved into a communal center where teaching and training of doctors, nurses and technicians is conducted on a large scale; where clinics for the care of the medically indigent are operated in increasing number; and where ambulance service and diagnostic and research facilities for the community are provided. The cost is paid for by the sick in-patients, and in part by government subsidy of in-patient free care. Nursing training costs have expanded to such an extent that in many of our larger hospitals they approach \$100,000 per annum. All these costs are lumped together as the cost of hospital operation and divided as a per capita cost of caring for patients. Expansion of these extra services have in most hospitals occurred much more rapidly than the services rendered the patients, and has been a major factor in pushing hospital charges to a point where the average citizen can no longer bear the load, where Blue Cross organizations face disaster and where social unrest is being fomented. To charge to the sick

1. Editorial in *Penn. Med. J.*, Jan.

1. R. A. Murray Scott, in *British Med. J.*, Dec. 17th.



man the cost of operating these educational facilities and community clinics is both improper and unfair; to require Blue Cross subscribers to underwrite these services for the entire body politic, subscriber and non-subscriber alike, is economically unsound.

The financing of the educational activities of the hospitals is as reasonably the responsibility of the state as is the maintenance of teachers' colleges and industrial training schools. The communal clinic and its diagnostic facilities should be paid for by tax funds and not by an exorbitant levy on the small but unfortunate group of the community currently requiring hospital care. Only by logical thinking and proper relating of services can these costs of hospital care be reasonably distributed and can fair fees for hospitalizing the sick man be maintained.

The costs of medical service *per se* and of hospital care are associated together all too frequently in the public mind. The controlled cost of hospital care is therefore increasingly important to the medical profession. Only the actual costs of illness shall be charged to the patient. Thus we will ease the burden of illness; we will help to preserve our voluntary insurance plans and voluntary hospitals; and we will point the way to the proper functioning of government in the field of health.

#### OVERHOSPITALIZATION OF POLIOMYELITIS PATIENTS

THE MEDICAL DIRECTOR<sup>1</sup> of the National Foundation of Infantile Paralysis writes the Editor of the *Journal of the Medical Society of New Jersey*:

The greatest cost to the National Foundation is payment for medical care to patients. It is urgent for all physicians to assist in the institution of measures which will reduce costs without prejudice to patients. Chief costs are for hospitalization. Many poliomyelitis patients are hospitalized when they can be just as well cared for at home at a reduced cost.

The Medical Director summarizes:

1. Abortive, nonparalytic and mildly paralytic poliomyelitis patients are being hospitalized in the mistaken idea that the isolation period must be in the hospital.

2. Overly prolonged hospitalization is frequent. This is particularly true of the paralytic patient who has achieved maximum improvement from daily physical therapy. Home care with periodic office or clinic visits is then in order.

3. There still exists in some places a general attitude that poliomyelitis is a bizarre disease which only a few physicians can manage. This is not so. It is disturbing, for example, to find physicians

leaning so heavily upon the guidance of physical therapists and nurses. The physician's assessment of the total patient is the best index in determining when a patient shall leave the hospital to receive home, office or clinic care.

4. Patients hospitalized on general ward services are not charged medical fees ordinarily. When patients are hospitalized on isolation wards for poliomyelitis, however, bills for medical fees are at times submitted. Payment is frequently made by the local chapters of the National Foundation whose treasuries are now generally depleted.

After all these years of waiting and searching, I have seen a miracle. It is a miracle for *anybody* to agree with the preaching of this journal for 25 years that far too many folks are put in hospitals, and that the great majority of that far too many are kept there far too long. When this agreement comes from a person who is paying the public's money for this hospital care, *Messieurs et Mesdames*, it is a major, even a maximum, miracle.

And this Medical Director has found out that no "polio expert" is needed to treat patients afflicted with poliomyelitis, that the run-of-mine doctor who brought the child into the world is just as competent as the "expert," more so than the "physical therapists and nurses."

My homage to this sagacious doctor.

I bespeak from him support of my plea over the years that family doctors and pediatricians be put at the head of anti-poliomyelitis work in every community, thus putting emphasis on *prevention* of the disease and its sequelae, rather than attempts at *correction* of the crippling sequelae.

#### SOME GREAT DEFECTS IN EDUCATION—MEDICAL AND GENERAL

A WEST-COAST dean<sup>1</sup> sees clearly and speaks out plainly:

Too many of our students have totally inadequate preparation in English; they have totally inadequate vocabularies. Too many students do not learn to read effectively in college and have not learned to study by the time they enter medical school. This goes deeper than college and lies in the methods used in the earlier teaching of English and study habits. . . .

From the day a student entered medical school until the time that he received his diploma many a youngster has never experienced instruction from other than a specialist.

For many years in hospitals and schools we failed to offer an effective program for training men for general practice. Aside from internships hospital opportunities were largely restricted to residencies in specialties.

1. E. L. Turner, M.D., Dean, Medical School, Univ. of Wash., Seattle, in *Ill. Mcd. J.*, Oct.

1. H. E. Van Riper, in *Jl. Md. Soc. N. J.*, Dec.



## TO WHOSE IGNORANCE ARE WE INDEBTED FOR THE USE OF THE CADUCEUS AS A MEDICAL EMBLEM?

THE TRUE STAFF OF AESCULAPIUS is a sturdy club, sometimes with living twigs, unlike the slender caduceus; and the single serpent that entwines itself about it stands for wisdom and also, through the periodical casting of its skin, for immortality.

A speaker before the College of Physicians of Philadelphia (1935) comments:

Twenty-seven Greek cities used the bust or figure of Aesculapius on their coinage, sometimes with attributes such as the cupping-glass, the omphalos, the serpent, the goat which suckled him, the sacrificial cock, the palm, the soothing poppy, and most frequently of all the serpent and staff.

Now, Mercury was the God of Commerce, mutable and uncertain, shrinking with the cold, expanding with the heat, associated with the great luetic scourge of civilization. He was the patron of thieves and liars; so that while it might be appropriate to consider him as the inspired and especial patron of traders, brokers and bankers, he is not the God our venerable and esteem craft should delight to honor.

## ON THE OTHER SIDE OF THE OCEAN, TOO

FROM a foreign medical journal, without further identification:

"Many patients today are seriously overinvestigated; for lack of careful personal and social histories many unnecessary investigations are daily carried out; insufficient thought is given to the question of how far need and how far curiosity is the compelling motive in applying multiple tests; surgery is in too many instances too lightly resorted to; many patients are hopelessly confused by the number of examinations, and the visits paid to them by a variety of hospital officers, and by the lack of an individual, personal interest in them; and many are discharged at the end of their sojourn in hospital, without any clear idea as to what is the matter with them, what their prospects are, or what their future treatment is to be. . . . We can no longer justify what is often an unscientific, a too-exacting and a too-costly system of diagnosis."

## INCREASE IN PEPTIC ULCER OF THE AGED

(F. W. Mulsow, Cedar Rapids, Iowa, in *Amer. J. Dig. Dis.*, Nov.)

A few of the factors which may be involved are: more people are reaching old age, the old are subject to more of the serious complications, and become hospital cases, and so are reported.

Many of the old are given surgical treatment which would not have been attempted a few years ago.

With more accurate diagnosis, many such cases as were formerly reported as cancer are now found to be cases of ulcer.

Today many people beyond the age of 60 or 70 engage in exhausting physical and nervous types of work, recreation or vacations.

Large numbers have lost many teeth or have poorly fitting dentures. Among 28 cases, in 13 there were poorly fitting dentures and in five many teeth were missing. Most of these eat little or no meat, because of their inability to properly masticate meats or fear of eating it. Deficiency of proteins has been found to slow the progress of wound healing.

The increased use of alcoholic and carbonated drinks and of sugar, coffee and tobacco.

The incidence of peptic ulcer in those beyond the age of 60 years appears to be on the increase. In a review of the recent American literature on peptic ulcer all ages considered, there were 19.2% above the age of 60, among 3,705 cases reported. In 416 deaths from peptic ulcer reported, 38% were past the age of 60. Among 65 deaths from peptic ulcer in Cedar Rapids before 1940, there were 38% above the age of 60, but in 75 deaths from peptic ulcer since 1940, 69% were past the age of 60.

## CANCER OF THE STOMACH

(W. L. Palmer, Chicago, in *Jl. Kansas Med. Soc.*, Aug.)

We do not know why cancer of the stomach or cancer of other portions of the digestive tract is more common in men than it is in women.

Age plays a very important role as may be seen in the sharp increase and continued rise in deaths per decade after the age of 40. This illustrates again the dictum of H. G. Wells, former professor of pathology at the University of Chicago, to the effect that everyone would develop cancer if he lived long enough.

The symptoms of gastric cancer, as we all know [and should bear in mind] are in the beginning minimal—dyspepsia only. For that reason all patients with dyspepsia should be subjected to x-ray examination. The x-ray is our most valuable diagnostic agent. Errors are made occasionally, but they are few.

All patients with gastric cancer, unless they have proved distant metastases, should be subjected to surgery with the hope that resection can be carried out. Resection should be carried out even though lymph-node metastasis has occurred, because some of the long-time survivors are persons in whom tumor has been left behind in the lymph nodes or beyond the line of resection.

## MODERNISTIC TREATMENT FATAL TO A SIX-YEAR-OLD

A six-foot blonde woman, a former child psychology student, went on trial at Wilkes-Barre, Penn., October 4th, charged with fatally beating her 6-year-old child.

The District Attorney stated she admitted the beating, "to cure him of a Freudian jealousy complex."

The District Attorney did not demand the death penalty, but told the jury that if the State proved its case it will have established that the killing was "wilful, deliberate and premeditated murder."

The woman allegedly admitted that she "thumped" her son in the stomach when he refused to get dressed and later "thumped him again" in the chest when he cried. Then when the boy continued crying she struck his head "on the floor 10 times," knocking him unconscious.

A State witness, Dr. Jules Foldes, a Hazelton, Pa., pathologist, testified the boy suffered three hemorrhages and a fractured skull.

Evidence was presented that the accused said in a statement made after her arrest that she struck her son to cure him of a "Freudian jealousy complex" of his 3-year-old sister. When he wailed "as if he were deriving a sadistic pleasure from his crying," she beat him more and hit his head on the floor.

No MAN ever distinguished himself who could not bear to be laughed at.—*Maria Edgeworth*—1812.

## NEWS

### MEDICAL COLLEGE OF VIRGINIA

Dr. W. T. Sanger, president of the College, has announced the receipt of the gift of a bequest to the College of \$400,000. The bequest was made by Mrs. Wilkins C. Williams.

The gift will be used to establish the A. D. Williams Memorial Clinic Foundation as a memorial to her husband.

### MERCY HOSPITAL DOCTORS HOLD DINNER MEET

Staff doctors of Mercy Hospital, Charlotte, held their annual banquet in the hospital auditorium the evening of January 17th. Dr. Thomas R. Byrnes was chosen 1950 president, succeeding Dr. George R. Black.

Other new officers are Dr. A. N. MacDonald, vice-president, and Dr. John Harlow, secretary-treasurer.

The guest speaker was Dr. G. Watson James, II, of the John and Mary R. Markle Foundation for Medical Science and assistant professor of medicine in the Medical College of Virginia. His subject was "The Clinical and Metabolic Effects of Vitamin B-12 in Pernicious Anemia."

A brief talk was made by Dr. Watsons Rankin, of the Duke Foundation, on the growth of hospitals in the Carolinas. He spoke of Mercy Hospital as one of the highest standing in the two states.

### LECTURES AT EDGEWOOD SANITARIUM

The first Annual Assembly of the Fowler Memorial Lectures was held February 10th at Edgewood Sanitarium, Orangeburg, South Carolina.

A banquet was tendered all doctors in attendance, being guests of Edgewood.

Among the speakers were: Dr. Charles N. Wyatt, Greenville; Mr. Edelu G. Fennema, Columbia; Dr. Olin B. Chamberlain, Charleston; Dr. Hugh Smith, Greenville; Dr. Orin Yost and Mr. Edgar W. Johnson, Orangeburg.

After the banquet came an Address on "Evaluation of Present Research in Psychiatry," by Dr. Nolan D. C. Lewis, of New York City.

THE CARTERET COUNTY MEDICAL SOCIETY, on October 11th, held its regular monthly meeting at the Morehead City Hospital. This was a dinner meeting with the hospital acting as host. The scientific program consisted of surgical case reports by Drs. John Way, of Beaufort, and J. W. Morris, of Morehead City.

The health officer, Dr. N. Thomas Ennett, discussed the new school health program and the society gave its approval to any fee schedule agreed upon between the surgeons and the health officer.

Dr. S. W. Hatcher, secretary, brought up the question of state assessments in connection with the proposed employment of the full time public relations officer. The question was discussed, chiefly, by Dr. B. F. Royal, member of the House of Delegates. No action was taken by the society on the question but it is evident that assessments are becoming too frequent and are too heavy. With a little daily effort on the part of the physician to establish good public relations there would be little need for a high salaried public relations officer. It is a job, mostly, for the family physician rather than a salaried director.

Dr. F. E. Hyde, Beaufort, president, presided.

Reported by N. Thomas Ennett, Cor. Sec.

DR. HOWARD RUSSELL MASTERS announces that, after being absent from The Tucker Hospital and the offices of Drs. Masters and Shield, he will resume practice January 20th, 1950.

DR. CLAYTON S. CERRY announces the opening of offices for the practice of Obstetrics and Gynecology at 1309 The Plaza, Charlotte 5, N. C.

DR. H. LEE LARGE, JR., has been appointed assistant pathologist at the Memorial Hospital, Charlotte, N. C.

DR. JOHN R. ASHE and DR. ROBERT A. MOORE, Charlotte, announce the association of DR. WILLIAM HUGH HALL in the practice of Pediatrics.

DR. OTHO B. ROSS, JR., announces the opening of his office for the practice of Internal Medicine, subspecialty interest: Psychosomatic Medicine, 512 Professional Building, Charlotte, N. C.

### DIED

Dr. Archibald Alexander Barron, Charlotte neuropsychiatrist, died Feb. 8th in a local hospital after an illness of a few days.

Funeral services were conducted at the home by Dr. James A. Jones, pastor of Myers Park Presbyterian Church, of which Dr. Barron was a charter member. The body was placed in Forest Lawn mausoleum.

Honorary pallbearers were Dr. Yates W. Faison, Dr. Raymond Thompson, Dr. Fred E. Motley, Dr. R. F. Lienbach, Dr. J. Rush Shull, and Dr. L. C. Todd, all of Charlotte; Dr. Alonzo Myers, of Fort Lauderdale, Fla.; Dr. E. G. Gammon, of Hampden Sidney, Va.; Norman W. Lynch, of McCall, S. C.; J. Roy Barron, of Rock Hill, S. C., and Peter D. Burks, of Charlotte.

## EDGEWOOD

A Distinctive Southern Sanitarium Fully Equipped for Complete Diagnosis and Treatment of Nervous and Mental Disorders . . . in an Atmosphere of Congenial Friendliness and Quiet Charm.

Edgewood offers all approved therapeutic aids; complete bath departments; supervised individual physical rehabilitation programs. Living accommodations are private and comfortable. Recreational facilities excellent. Full time psychiatrists, adequate nurses and psychiatric aides assure individual care and treatment. More detailed information on request.

Psychiatrist-In-Chief

ORIN R. YOST, M.D.

## EDGEWOOD

ORANGEBURG

SOUTH CAROLINA

Dr. Barron was born in York County, South Carolina, November 4th, 1886. He was educated in the York County schools, at Erskine College, Due West, S. C., and at Vanderbilt University, Nashville, Tenn., from which he received the degree of Doctor of Medicine. Subsequently he took special work at University of Vienna, Vienna, Austria.

In 1910 he came to Charlotte and engaged in the practice of medicine. In World War I he served as a captain in Medical Unit O, 18 months of his service having been overseas.

After the war he returned to Charlotte and resumed practice. He was a member of the Mecklenburg County and the North Carolina, of the Tri-State and Southern Medical Associations. He held membership in national and state neuropsychiatric associations, and had served as president of the North Carolina Neuropsychiatric Association. He was a diplomate in Internal Medicine and Neurology and Psychiatry.

Dr. R. E. Rhyne, 65, Gaston County Health Officer for more than 20 years, died January 16th at an Asheville hospital where he had been recuperating. Dr. Rhyne resigned as Health Officer December 1st, last.

Dr. Rhyne was born in Gaston County, attended Gaston College, Lenoir College and the N. C. Medical College. He was engaged in private practice for 15 years before assuming the health department post.

Dr. Charles Whitehead Woodson, 71, died of a heart attack January 17th in his home at Salisbury, N. C., where he was recuperating from a recent operation.

A practitioner in Rowan County since 1908, Dr. Woodson had been prominent in the community's civic and commercial life.

Dr. Benjamin Harris Tatum, 79, died at his home at Clifton Forge, Va., January 7th.

A native of Franklin County and a graduate of the University of Maryland, Dr. Tatum located at Clifton Forge in 1894 and continued the practice of medicine until a year ago.

#### *Schering 1949 Award Winners Announced*

Isaac Lewin, medical student in his final year at the University of Pennsylvania School of Medicine, has been announced as the recipient of "The Schering Award for 1949." Dr. Edward H. Henderson, Schering's Director of Clinical Research, and Dr. Norman L. Heminway, chairman of the Schering Award Committee, presented the first prize of \$1,000 to Mr. Lewin for his paper on "The Metabolic Effects of the Steroid Hormones."

Co-authors B. Cuthbert Arthur and Ira E. Baillie, both third year students at the College of Medical Evangelists, were awarded the second prize of \$500. Mortimer Lipsett, third year student at the University of Southern California School of Medicine, and Dr. Lester Rice, a senior at Temple University School of Medicine when enrolled in the competition and now an intern at the Michael Reese Hospital, Chicago, were tied for third prize and were awarded duplicate prizes of \$300 each. Twenty-four contestants received "Honorable Mention," and each will receive as a special award a Tyco's sphygmomanometer in a leather case.

"The Schering Award" is given annually for the best manuscripts prepared on a designated phase of endocrinology. Medical students of the United States and Canada are eligible for the contest. Each year, the majority of medical schools are represented by applicants.

"The Clinical Use of Steroid Hormones in Cancer" will be the subject of "The Schering Award for 1950."

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Each fluid ounce contains:

Bismuth Subsalicylate, U.S.P.	8 Grs.
Salol, U.S.P.	2 Grs.
Calcium Phenolsulphonate	2 Grs.
Sodium Phenosulphonate	2 Grs.
Zinc Phenolsulphonate, N. F.	1 Gr.
Pepsin, U.S.P.	4 Grs.

ASTRINGENT AND CARMINATIVE  
EFFECTIVE IN DIARRHEAS.

#### AVERAGE DOSAGE

FOR CHILDREN — Half teaspoonful every fifteen minutes for six doses, then a teaspoonful every hour until conditions are relieved.

FOR ADULTS—Double the above dosage.

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## ACADEMY of GENERAL PRACTICE

## Program

SUNDAY, MARCH 19TH

Washington Duke Hotel

A. M.

11:00—Registration Desk Opens (Lobby)—Meeting of Board of Directors

Crystal Ballroom

P. M.

2:30—Call to Order, Roscoe D. McMillan, M.D., Chairman, Committee on Arrangements

Invocation

Announcements

2:40—Business Meeting

3:00—President's Address—The Utopia of Medicine—William A. Sams, M.D., Marshall, N. C.

3:30—The Acute Abdomen—Philip Thorek, M.D., Chicago

4:00—The Early Diagnosis and Treatment of Carcinoma of Cervix—Frank R. Lock, M.D., The Bowman Gray School of Medicine

4:30—Discharges from the Vagina; Treatment in Private Practice—G. G. Passmore, M.D., San Antonio

5:00—Discussion Period

5:30—Adjournment

Visit Technical Exhibits (Mezzanine Floor)

6:00—Dinner Hour (any place you desire)

8:00—Bedside and Office Laboratory Procedure—W. M. Nicholson, M.D., School of Medicine, Duke University

8:30—Breathlessness, Palpitation and Dizziness as Psychosomatic Symptoms—Lawrence C. Kolb, M.D., Mayo Clinic

9:00—The Rediscovery of Psychosomatic Medicine—Vernon Kinross-Wright, M.D., Charlotte Mental Hygiene Clinic

9:30—Discussion Period

10:00—Adjournment

MONDAY, MARCH 20TH

Amphitheatre—Duke University School of Medicine

A. M.

9:00—Some Aspects of the Physiology of Circulation—Eugene A. Stead, Jr., M.D., School of Medicine, Duke University

10:00—A Discussion of Electrocardiography—Edward S. Orgain, M.D., School of Medicine, Duke University

11:00—Clinical Diagnosis and Therapy of Common Cardiac Arrhythmias—Jack Myers, M.D., School of Medicine, Duke University

M.

Lunch (Duke University)

P. M.

2:00-4:00—Ward Rounds on the various services.

P. M.

8:00—Round Table Discussion of the Patient with Heart Disease—Co-ordinator, Eugene A. Stead, M.D.

Members of the Panel:

Edward S. Orgain, M.D., Medicine

Walter Kempner, M.D., Medicine

Bayard Carter, M.D., Obstetrics

Will C. Sealy, M.D., Surgery

Jerome Harris, M.D., Pediatrics

TUESDAY, MARCH 21ST

Amphitheatre—Duke University School of Medicine

A. M.

9:00—The Menopause and Its Problems—E. C. Hamblen, M.D., School of Medicine, Duke University

10:00—A Summary of the Present Knowledge of ACTH and Cortisone—Frank Engel, M.D., School of Medicine, Duke University

11:00—The Non-Surgical Treatment of Disease of the Prostate—E. P. Alyea, M.D., School of Medicine, Duke University

M

12:00 to 2:00—Lunch (Duke University)

P. M.

2:00 to 4:00—Ward Rounds (subject to be announced later)

Washington Duke Hotel

6:00—Social Hour (Crystal Ballroom)

7:00—Banquet (Main Ballroom)—(Dress Optional)

7:45—Address: Proctology as it Interests the General

Practitioner—Louis A. Buie, M.D., Mayo Clinic

8:45—Installation of Officers

9:00—Adjournment

## EXPOSURE TO SUN CAN PRODUCE HIVES

(S. P. Epstein, Marshfield, Wis., in *Annals of Allergy*, Aug.)

Hives due to allergic reaction to sunlight is a rarity but a reality. The condition may be transferred by injecting some of the patient's blood serum into the skin of a normal individual.

The newer anti-allergy drugs are of help. The protective creams effective against sunburn are not effective because they do not protect against the longer ultraviolet rays.

## ANESTHETICS FOR ASTHMATICS

(R. E. Brennan, Reading, Pa., in *Annals of Allergy*, July-Aug.)

Persons suffering from allergies, and especially asthma, are more susceptible to anesthetics than are others. Anesthesia in the allergic patient requires proper planning and proper selection of agents. The critical time usually comes after the operation is over.

Very few cases of allergy to the commonly used inhalation anesthetics have been reported. But with the newer, including the injectable, anesthetics, the story is different. The anesthetist should always study the patient before the operation. Not infrequently it may be necessary to make a second choice of anesthetic agent or procedure because of this complication of the situation.

## STREPTOMYCIN EFFECTIVE AGAINST BACILLARY DYSENTERY

(S. Ross et al., in *Jl. A. M. A.*, Sept. 17th)

Treatment of bacillary dysentery with streptomycin produces prompt relief from the disease, according to a study made by five Washington physicians.

Lowering of temperature and reduction in diarrhea usually occurred in acutely ill patients in 12 to 24 hours after oral streptomycin therapy was begun.

All 34 patients treated with streptomycin were children, aged 3 months to 12 years. All had an uneventful recovery from the disease except five patients who had either a relapse or a reinfection within one month after discharge.

THE FLOUR is the important thing, not the mill; the fruits of philosophy, not the philosophy itself. When we ask what time it is we don't want to know how watches are constructed.—G. C. Lichtenberg—1799.

## New Oranixon Tablet Simplifies Treatment of Neuromuscular Disorders

Organon, Inc., of Orange, N. J., has just announced to the profession that Oranixon is now available in a new 500-mg. tablet. With the new tablets, fewer doses per day are needed for the treatment of Parkinsonism, hemiplegia, low-back pain, and other neuromuscular disorders.

The average dosage of Oranixon is 3 to 5 Gm. per day; with the new 500-mg. tablets, this may be easily given as 2 tablets three to five times a day.



## BOOKS

**PRIMER OF ALLERGY:** A Guidebook for those who must find their way through the mazes of this strange and tantalizing state, by WARREN T. VAUGHAN, M.S., M.D., Richmond, Va., with illustrations by JOHN P. TILLERY. Third edition, revised by J. HARVEY BLACK, M.D., Dallas. *The C. V. Mosby Company*, 3207 Washington Blvd., St. Louis 3. 1950. \$3.50.

This little book's entirely practical nature is shown by the fact that its first chapter is entitled "Learn to Live With Your Allergy." This choice of a subject to present in the very beginning shows that the authors are not disposed to encourage persons afflicted with allergy to believe that they can ever become as though they had never been so afflicted. The following chapters are likewise filled with invaluable information for this group of persons.

**FROM THE HILLS:** An Autobiography of a Pediatrician, by JOHN ZAHORSKY, M.D. *The C. V. Mosby Company*, 3207 Washington Boulevard, St. Louis 3, Mo. 1949. \$4.00.

The author tells us that his name is derived from a word which in his native Hungarian means mountain or hill man. His account of his ancestry, his infancy and early childhood, the old homestead, of his schooling, of various families who befriended and otherwise influenced the family of which he

was a member, of his various experiences in his professional life and of his many hobbies make up the first two parts of the book. Part III, which he calls "The Decline," is devoted to his experiences as a physician and as a well-rounded man after he passed his sixtieth year. The cheerful and useful philosophy which Dr. Zahorsky has believed in and practiced throughout his life comes to finest fruition in the part of the book which he calls, but with which calling few will agree, the decline.

Every physician will do well to obtain a copy of "From the Hills." The bookseller will run no risk in assuring any prospective purchaser that, should he decide after reading the volume it is not worth the purchase price, his money will be gladly refunded. Those few who would be disposed to request a refund will be ashamed to ask for it.

**THE 1949 YEAR BOOK OF DRUG THERAPY**, edited by HARRY BECKMAN, M.D., Director, Department of Pharmacology, Marquette University School of Medicine. *The Year Book Publishers, Inc.*, 200 East Illinois St., Chicago 11.

The continuing introduction of new and potent drugs and other chemical agents which may not with accuracy be called drugs makes the appearance of each new year book a matter of eager anticipation and cordial welcome. The practice over a number of years of printing on the paper envelope a considerable number of questions, and along with each question reference to the page on



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You trust  
its quality

which the answer is supplied, serves well two purposes: one, the assuring that the reader will learn these important answers; and, two, the stimulation of the reader to seek further for answers to many other questions which confront him and of whose answers he is not certain.

Mitchell-Nelson's **TEXTBOOK ON PEDIATRICS**, edited by WALDO E. NELSON, M.D., Professor of Pediatrics, Temple University School of Medicine; Medical Director, Saint Christopher's Hospital for Children, Philadelphia. With the Collaboration of Sixty-three Contributors. New, Fifth Edition. 1658 pages with 426 illustrations, 19 in color. W. B. Saunders Company, Philadelphia and London 1950. \$12.50.

The editor acknowledges with gratitude the many helpful critical comments made by various readers on the previous edition, which was, likewise, a joint enterprise of a great many pediatricians, and says that these criticisms have been of real value in providing this edition. The entire book has been carefully scrutinized, a considerable portion has been rewritten and a number of new sections have been added. The work is commended as containing all that need be known to qualify a doctor for caring for the health of infants and children according to the best knowledge of today.

**DISEASES OF THE FOOT**, by EMIL D. W. HAUSER, M.S., M.D., Associate Professor of Bone and Joint Surgery, Northwestern University Medical School. New, Second Edition. 415 pages with 195 figures. W. B. Saunders Company, Philadelphia and London. 1950. \$7.00.

The reception of the first edition was so gratifying as to demand a second. The present edition has departed little from the first in the general arrangement of material all of which is provided with a view to emphasis on function rather than on form. The chapter on the treatment of pes valgoplanus with corrective shoes and correct gaits has received wide acceptance, and experience with this treatment has required that it be rewritten and illustrated more in detail. The chapter on infections has been enlarged and revised to include all the developments as to antibiotics.

The whole subject of diseases of this important member has been covered in a practical and satisfactory way.

THE SURGICAL TREATMENT of the hypertensive state can in no way be considered a cure; however, because of its influence in a large percentage of cases, it has certainly attained a significant status in accepted therapy. There can be no rigid rules concerning candidacy of an individual for this surgical treatment. Each case must be analyzed on its own merits with a background of logical criteria in mind.

—M. M. Peet & R. C. Bassett, Ann Arbor, in *Penn. Med. J.*, Sept.

THE TUBERCULOSIS DEATH RATE in the United States for 1949 is setting an all-time low record showing a reduction

of 10 per cent from the figure of the year before. The present rate in the population is only half that of 12 years ago, according to the statisticians of the Metropolitan Life Insurance Company.

#### PERNICIOUS ANEMIA IN CHILDHOOD

(R. W. Davis et al., Rochester, N. Y., in *Blood: The J. of Hematology*, Dec.)

The criteria necessary for the diagnosis of pernicious anemia in childhood according to Peterson and Dunn are: 1) macrocytic anemia; 2) arrest of maturation of bone marrow at the megaloblastic level; 3) specific response, i.e., reticulocytosis after liver therapy; 4) need for continuous therapy to maintain a continuous remission; 5) histamine-resistant achlorhydria.

There is general agreement concerning the first four of these criteria, but other authors are of the opinion that the diagnosis can be made in an occasional case of which achlorhydria is not a feature. We believe that the case described is one of true pernicious anemia although free HCl was found in the gastric secretions. The future course of the patient will be followed with interest, especially as regards gastric acidity.

A case of megaloblastic anemia without specific neurologic complications in a six-year-old girl is presented, despite the fact that there was a small amount of free HCl in the gastric juice after injection of histamine. Prompt hematologic response was obtained following administration of refined liver extract, folic acid and vitamin B<sub>12</sub> in successive relapses.

#### PROCTOLOGY AND THE GENERAL PRACTITIONER

(A. J. Cantor, Flushing, N. Y., in *Amer. J. Dig. Dis.*, Dec.)

The general practitioner can add greatly to his range of services to the patient and to his own income by careful proctologic study in each case. He may safely handle all non-surgical proctologic therapy. When the patient does not require surgery it is always my practice to refer him back to the general practitioner for necessary treatment. Indeed, even if surgery is indicated, and if the general practitioner is so inclined, he may assist at operation and be entrusted with the major share of post-operative management.

[And he can do all but the majorest surgery of these parts just as well as, and a lot cheaper than, the specialist.]

#### OBESITY HAS SLIGHT, PREGNANCY NO, RELATIONSHIP TO GALLBLADDER DISEASE

(Pekka Brummer, in *Ann. Med. Internae Fenniae*, Fasc. 2, 1949)

The writer has observed the incidence of obesity and pregnancy in female patients with gallbladder disease on the basis of hospital cases. It was noted that these patients were, on an average, somewhat more obese than the control cases. On the other hand, no differences were seen in the incidence of pregnancy and deliveries between cases of gallbladder disease and control cases.

#### DEATHS FROM DERMATITIS AND STOMATITIS DURING STREPTOMYCIN THERAPY

(R. A. Pallister, in *British Med. J.*, Dec. 3rd)

Dermatitis may occur during the administration of streptomycin, but usually it is mild and unimportant. Stomatitis is a less common complication. Here are reported two fatal cases in which fever and lesions of the skin and mucous membranes occurred during the treatment of pulmonary tuberculosis with this drug. The cases considerably resembled severe erythema multiforme. Poor nutrition, which is not rare in Malaya, may play some part in skin and mucous membrane damage.

## CHUCKLES

**"TAKE YOUR CHOICE: PUT THAT ONE BACK AND TAKE YOUR CHOICE"**

A mother told her little boy he must let his playmate take his choice of the two apples on hand.

*Host Little Boy:* "Take your choice, Billie."

Billie promptly takes the big apple.

*Host Little Boy:* "Billie, put that one back and take your choice."

DURING THE WAR the demand for mechanics was so great that the qualifying test as a mechanic got to be very simple. The applicant was put into a room with a leg of lamb, a dog collar and a screw-driver. If he picked out the screw-driver he was hired.

In his room at the state institution sat a man whose only article of clothing was a hat.

"Look, friend," an attendant said, "that's no way to be sitting around. Why don't you put some clothes on?"

"Why should I?" replied the inmate. "Nobody comes to see me."

"But why wear a hat?"

"Well," shrugged the other, "somebody might come."

He: "May I call you by your first name?"

She: "By your last name if you wish."

Mr. Jones, hearing the front doorbell ring while he was working in the back yard, went in to find out who as calling.

"It's the furniture folks," his wife informed him in a whisper. "They've come for the piano."

"But I gave you the money for the next installment!" he reminded her.

"Yes, I know, dear," she answered placidly. "I'm going to pay them as soon as they get it downstairs. I've decided to have it in the living-room."

The conductor was perplexed. "Who on earth," he spluttered, "would want to steal a Pullman ladder?"

Just then, the curtains parted and a little old lady poked her head through cautiously. "Porter," she whispered, "you may use mine if you like. I won't need it until morning."

**And Misshapes Our Middles**

After a long course of treatments had failed, the masseuse sighed to her plump patient: "We can't fight fate. As the poet says: 'There is a destiny which shapes our ends.'"

**Quite So**

A G. I. applying for a loan was asked his business and gave the startling answer that he was a psychiatrist in a pottery factory. He took care of the cracked pots.

**Post Combustibility**

Two hollow-eyed, bleak-looking Scots were discussing the party on the night before. "D'ye ken," said one, "that Mactavish fell in the river on his way home last night?"

"Ye dinna mean tae say he was drowned?" asked his friend.

"Na, na," replied the first, "not drowned . . . but sadly diluted."

**Couldn't Lose Don't**

Daniel Boone was once asked if he had ever been lost in the woods. "Never got lost," Boone replied. "But I was bewildered once for three days."

**Hyphenated**

A current gag in Yugoslavia reports that 95 per cent of the people of that nation are for Marshall Tito—five per cent for Tito and ninety for Marshall.

**Demanding the Impossible**

"I want an explanation and I want the truth," stated the wife irately. "Well, make up your mind," he snapped. "You can't have both!"

**THE STORY BEHIND THE WORD: SOME INTERESTING ORIGINS OF MEDICAL TERMS**

(Harry Wain, Mansfield, in *Ohio Med. J.*, Sept.)

*Charlatan*—From the Italian *ciarlar*—empty garrulity, to chatter, or to be a windbag.

*Quack*—from the Low-German *Quackelen*—to talk much and idly, to work unskillfully.

*Mountebank*—Literally, *mounts-the-bench*. Quacks frequently carried a bank or bench and mounted upon it to deliver their talk.

*Panacea*—from the Greek *panakcia*—*pan*, all and *akeo-mai*, to heal.

*Placebo*—Latin *I shall please*.

*Devious*—from the Latin *de lira*, deviating from the furrow or straight line.

*Remedy*—Latin *remedium*, a cure.

*Tonic*—from the ancient Pythagorean school of philosophers who believed that music would heal the sick, and particularly recommended it for tired minds and jaded nerves.

*Whitlow*—from the provincial English term *whickflaw* from "which or quick" and "flaw" a crack, defect or sore.

*Tragus*: from Gr. *tragos*, a goat; beset with hair resembling the beard of a goat.

*Scrofula*: The neck often swelled until it resembled that of a little hog, hence *scrofula* a pig. L. *scrofa*, a sow.

*Stethoscope*: Gr. *stethos*, chest and *scopein*, to view or explore.

*Yaws*—A term descriptive of the raspberry-like lesions of the disease. It is said to be an African dialect term, meaning raspberry.

*Beriberi*:—A Shinghalese word which means cannot. The patient is so weak he cannot do anything.

*Hordeolum*: From the Latin *hordeum*—barley, from its likeness in size and hardness to a small barleycorn.

**PATHOLOGIC FINDINGS IN SHOCK**

(T. B. Mallory, Boston, in *Il. Mount Sinai Hosp.*, Sept., Oct.)

A standard pattern of recognizable changes was found in patients with traumatic shock who survived a minimum of 18 hours after injury. This consisted of fat vacuolation of the myocardium, of the central cells of the liver lobules and of the ascending limbs of Henle's loops in the kidney. In the adrenal gland, the doubly-refractile lipid of the zona fasciculata became depleted after the same time interval. In all four organs, these changes persisted for three days after injury; but from the fourth day onward, in cases uncomplicated by infection, a tendency to return to normal could be demonstrated. The incidence of this pattern of changes proved significantly higher in shock cases than in a variety of control cases. It was concluded that they constitute evidence of parenchymatous injury produced by shock.

A fifth lesion, named Lucké "lower-nephron nephrosis," appears in a smaller but significant proportion of shock cases. A correlation between the severity of shock and the frequency of this lesion indicates that shock is an important factor in its development.

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# THE JOURNAL OF SOUTHERN MEDICINE AND SURGERY

306 NORTH TRYON STREET, CHARLOTTE, N. C.

*The Journal assumes no responsibility for the authenticity of opinion or statement made by authors, or in communications submitted to this Journal for publication*



JAMES M. NORTHINGTON, M.D., Editor

VOL. CXII

MARCH, 1950

No. 3

## PRESIDENTIAL ADDRESS

### The Tri-State Medical Association — Past and Future

RUSSELL BUXTON, M.D., Newport News, Virginia

IN 1899, FIFTY-ONE YEARS AGO, the first annual meeting of the Tri-State Medical Association was held in Charlotte, North Carolina. The ground work for this Association had been laid, through the previous two or three years, by the combined efforts of physicians of North and South Carolina and Virginia, and particularly by the hard work of Dr. W. H. H. Cobb, of Goldsboro, N. C., Dr. James Evans, of Charleston, S. C., and Dr. Paulus Irving, of Richmond, Va. An organization embracing the physicians of the three States was decided upon because of their common interests and problems. Dr. Cobb was named as temporary president at a meeting held at Virginia Beach in August, 1898, and a resolution was passed calling for the first meeting to be held in Charlotte in January, 1899. For this meeting Dr. E. C. Register was appointed Chairman of the Committee for Local Arrangements and he obtained the services of Colonel Hamilton C. Jones,<sup>1</sup> a prominent lawyer in Charlotte, to make the Address of Welcome. It will be interesting to you for me to read the comments he made on the treatment of gripe on the occasion of this meeting: "But there is one subject that I

miss from your program that I expected and hoped would be there, and there would be some deliberation upon. You cannot be aware that we have an epidemic of gripe in our midst, for you have ignored it in your list of these, and I thought perhaps you were ignorant of the fact and I would mention it in a semi-professional way, not only as a warning, but to apprise you of the fact that there seems to be some diversity in the practice of our local physicians here in regard to the treatment of it, and I thought we should have some deliverance from you on the subject. Now, for instance, a week or so ago I was in company with one of my doctor friends here and he said he had the gripe. He at once entered into a dissertation on the proper treatment, and he said corn whiskey and glycerine was the best thing for the gripe, and he was still arguing upon it when a fellow came in sneezing and coughing, and he diagnosed the case and said he had the gripe. I sat up and listened, of course, for him to prescribe corn whiskey and glycerine. But I glanced over his shoulder, and what do you think he wrote? 'Asafoetida pills, five grains each, number ten, to be taken four at a time and repeated every four hours.' That is what he wrote, and the fellow went off with it. I was amazed, and after the poor fellow had gone I asked the doctor how about it. Well, he said, 'I know that fellow, in the first place, and can trust him

1. Father of the present Representative in Congress from the Charlotte District, Hon. Hamilton C. Jones.

To the Fifty-first Annual meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Fayetteville, N. C., February 20th-21st, 1950.

to take the whiskey anyhow without any prescription. In the next place, it will never do to have this a matter of common knowledge, for all the revenue of the medical profession would be turned into the bar rooms, and it wouldn't do.' I was greatly amazed. I was in the position of the doctor who found a remedy that was a very good thing for the Dutchman, but was hell for the Irishman. My doctor friend took a dose of corn whiskey and I noticed he left out the glycerine. I suggested to him that he had left out the glycerine and he said it wasn't absolutely necessary to take it along with the whiskey, that he had some glycerine at home and he would take it when he got home. The thing got still more obscure until after a while he took another dose of corn whiskey. I suggested that he had better make a memorandum to take the glycerine, but he said the regular dose was three parts of whiskey and one of glycerine, and he would take that one part when he got home with the last drink. Well, I asked him what he would advise me to do if I got it. He said that would depend entirely upon how late I was up the night before. I had some curiosity, and met the fellow afterwards on the street to whom he had given the asafœtida. I asked him how it worked. He said it had a curious sort of smell about it when it came loose in his pocket, that he took the darn stuff and it knocked the gripe out of him, but his wife had hidden away all his clothes. So you see how important it is that we shall have some deliverance on the subject of treating the gripe."

The first meeting of the Tri-State Association was a tremendous success. A Constitution and By-laws were adopted and thirty scientific papers were presented by members from all three States. It is interesting to us now to note that there was a fair amount of opposition to the forming of this association, stemming chiefly from the fact that it was felt that the meeting would detract from the attendance on the State Society meetings, and also it was feared that the new Association would be too high-brow for the average physician. Despite these objections numerous physicians from all three States promptly became members of this Association and the second meeting was held in Charleston in 1900, Dr. Cornelius W. Kollock presiding. This meeting was exceptionally well attended, the initial enthusiasm for the Association was augmented and many new members were added. In looking over the programs of the first few years it is noteworthy that the subjects of tuberculosis, cancer, alcoholism, malaria, the problem of colored patients and various public health problems were repeatedly stressed; and I feel that these papers and discussions awakened the interest of the medical profession so that they become aware of the problems and many advancements were made

in the public health field during these years. By 1908, when Dr. Stuart McGuire, of Richmond, was president, the Association had grown until there were over two hundred members about equally divided between the three States. In this, the fifty-first, meeting of the Association, I would like to read to you a portion of Dr. McGuire's presidential address, so that we can again learn the purposes of the Tri-State Medical Association which he states quite clearly: "At present, without counting new fellows who will be elected at this meeting, it has over 230 members, and this, after eliminating the names of all old members who have not paid dues for more than one year. The personnel of the Society is of high order, as its members represents the best and most progressive element of the great State Associations of the two Carolinas and Virginia. The annual sessions of the Tri-State Medical Association have been free from political struggles, personal controversies or ethical discussions. The papers read have been of great scientific value, and their discussion, while dignified, has been sharp and vigorous, thus serving to make it more impressive and instructive."

For the next 43 years, except during the two world wars, the Association has had annual meetings rotating between the three States, and it has served, and still serves, the high purposes for which it was founded.

You will note that the title of this paper is Tri-State Medical Association, Past and Future. The present was purposely omitted in the title but I wish to thank Dr. R. B. Davis and his program committee for the excellent program which they have worked out for us. I am sure that you all will enjoy every minute of it and that he will be more than repaid by the attendance and the enthusiasm with which the program is being met. I also wish to extend to Dr. W. T. Parker and his Committee on Local Arrangements, the appreciation of the Association for their arduous and sustained efforts for making the meeting a success.

Now to the future of the Tri-State Medical Association. The purposes of the Association are well known to you all, and in the past it has been our policy to limit the meeting to scientific and social affairs. In the present time, however, I feel that we should come out of the clouds, certainly long enough to look into the problems of the medical profession and do what we can to solve them. As I see it, the first of these problems concerns itself with the definite division in the ranks of the physicians between the specialists and the general practitioners, and it is here in this Association and others similar to it that this breach can and should be healed.

Dr. Claude Coleman, one of our distinguished members, in writing in the *Virginia Medical Month-*



ly, recently criticized the specialist because of his attitude toward the general practitioner in medical consultations. To quote Dr. Coleman directly, a part of his article is as follows: "In this day of specialization, frequent consultations are required. It may not be feasible for the doctor requesting the consultation to be present when the patient is examined by the consultant. The writer believes that a great deal was sacrificed in the value of consultation when this custom was practically abandoned for time-saving purposes. As a matter of fact, practically the only joint consultations now held are on cases in litigation, when the patient's attorney wishes his medical representative, and often himself, to be present at the consultation. This type of consultation is usually not very satisfactory."

"In connection with consultations and the ethical relationship incident thereto, the writer cites the following example for consideration. A general practitioner in a distant town refers a patient to a surgeon to verify or rule out a surgical lesion. In his study of the case the surgeon finds it desirable to have the opinion of a specialist in another field and such consultation is requested. After examining the patient, the second consultant sends the patient home and reports directly to the family physician, without mentioning this to the surgeon, and without explaining to the family physician how he happened to be in on the case. The general practitioner may never have heard of this second consultant. It is at once evident just what this action might lead to. The patient is confused and does not know where to turn for information. The general practitioner feels that the surgeon to whom he sent the patient has taken no interest in the case, not having made any report, while the surgeon is left in an embarrassing position indeed. Often in such cases, conflicting opinions are given to the general practitioner, adding to the general confusion and dissatisfaction."

"In the writer's opinion, it is the duty of the consultant to make his report only to the physician requesting the consultation. The consultant should also recognize the difference between a request for examination and a request to take over the management of a case."

To Dr. Coleman's words I would like to add that such incidents as he has stressed are only too common and do no good to the specialist or the general practitioner. How easy it would be to avoid such incidents by using ordinary politeness, tact and common sense in dealing with patients who are referred to the specialist. A little note by the consultant would work wonders and I am sure that all of us here could be of value in attempting to see that the relationship between the practitioner and the medical and the surgical specialist is made closer and more harmonious.

A second problem which concerns us, one which has been discussed already today by Dr. George Wilkinson, is the high cost of medical care. We have all gained a great deal from his views and I would like to add just these few words. The cost of medical care is, and probably will continue to be, high. A great deal of this is brought on by the patient's demand for proper care and his education as to what is considered proper care. I would like to stress the fact that a great deal of financial hardship for the patient can be avoided if the physician will take enough time to talk with the patient and question him concerning his desires and his financial status, and try to guide him into the path of least cost without sacrificing anything that would be of benefit to the patient. It is unfortunate that in the hurry and rush of the present day all of us, specialists and general practitioners alike, have tended to push the patient off and not discuss anything with him except his illness. We should be more approachable and more considerate of the patient's entire wellbeing, not only the sick part.

As a recommendation to change this condition, I suggest that we be more approachable, that we go out of our way to see that the patients are in a position to afford what we are going to supply them in the way of treatment and care. There are charitable organizations that will take care of these people if their own pocketbooks cannot, but it is up to use to see that the patients understand just what they are getting into so that they can be headed in the right direction before they are financially hard-pressed.

Somewhat along the same line is the changing in the sense of responsibility to the patient. About a year ago, some of us who are here had the pleasure of hearing Dr. Louis Douglass, Professor of Obstetrics and Gynecology at the University of Maryland Medical School. He made a remark in the course of his discussion which has stuck in my mind ever since, and I hope it will remain in yours. Talking concerning the maternal mortality study, which has been conducted in Baltimore for many years, Dr. Douglass said he was struck by the fact that many times the attending physician would excuse a maternal death by saying, "this patient saw me once during her pregnancy and then did not come back until she was beyond all aid." The speaker said the physician making this type of statement felt that he was free from all blame in a death and that the mortality should be charged against the patient rather than the doctor, but Dr. Douglass felt otherwise. He stated that it was the doctor's responsibility, once he undertook the care of a patient, to see that the patient returns for her prenatal care, and that it is his duty to communicate with her if she does not return. As I mentioned, this remark has remained in my mind and I feel that we should enter into the life of

each patient to the extent that we can overcome all objections or stubbornness which might prevent the institution and carrying out of the most appropriate management. It should be stressed that when we undertake to treat a patient that we should insist that he be studied thoroughly and that he receive the treatment that is indicated and that we should go out of our way to see that he returns if he fails to show up when he should.

The third problem, which concerns all of us in the medical profession and probably will continue to concern us for many years, is the insistence by the present Administration that the peoples' health can be improved by governmental interference. So much has been said and done concerning this problem that I hesitate to dwell upon it at any length. All of us are upset by the virulent attacks which have been made upon our profession over a period of years. The men behind these attacks state that the present system of medicine should be changed and that another form should be substituted because of the lack of medical attention to the tens of millions of people of our country. There is no need for me to explain the necessity for active participation of all physicians in this country in the fight against such a change. Each doctor can and should aid the AMA financially, and should go beyond this and be an emissary in his office and daily work to educate all people to the advantages of our present system of medical care. There are already many who are helping us in the fight as witnessed by the statement of the Honorable Frederick C. Smith, of Ohio, in the House of Representatives in January, 1949. This Congressman praised the medical profession by saying that: "Under our system of private operation of business with an independent medical profession, we have the best health record of any large nation in the world. Do you realize that in our generation 20 years of life have been added to the average expectancy of individuals at birth? Disastrous epidemics have been virtually eliminated; we have stronger, better-fed children; there has been a sharp reduction in the death toll from many diseases that were formerly high on the mortality list; and we have a vast storehouse of knowledge about the prevention and treatment of disease. This is the record of what has been achieved by free men in the medical field in our time." This is a wonderful and well-deserved tribute to our profession; but in the back of my mind I wonder why we as physicians have come to the point where it is necessary for such statements to be made. Somewhere we have let ourselves be placed in a position so that we must join together and fight this battle against governmental medicine rather than have it fought for us. I do not believe that our fathers or grandfathers in the medical profes-

sion would have had to take up arms to ward off governmental intrusion; their patients would have had no part of it, and it is only by realizing our duty to our fellow practitioners and to our patients that we can regain our former position.

Robert Louis Stevenson, after long years of invalidism had given him intimate knowledge of the physicians of three continents, paid the medical profession the highest tribute which possibly could have been paid to any group: "There are men and classes of men that stand above the common herd; the sailor, the soldier, and the shepherd not infrequently; the artist rarely; rarer still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are most important, Heracleian cheerfulness and courage. So that he brings air and cheer into the sick room, and often enough, though not so often as he wishes, brings healing."

Finally, as members of this Association, I hope you will think back to the early days when this organization was formed, and remember that, while it is our purpose to learn as much as we can about medicine from a scientific standpoint, it is also our duty to protect and safeguard our profession from socialization as is being attempted today.

#### MULTIFOCAL MALIGNANT NEOPLASIA

(L. Y. Dyrenforth & A. T. Kennedy, Jacksonville, in *Jl. Fla. Assoc.*, Feb.)

The patient had an obvious medullary carcinoma of the breast, which had spread to the pectoral muscles, regional lymphatics, lungs, pleura and liver. The second neoplastic growth was a primary adenocarcinoma of the hypophysis, chromophobe-cell type, which had spread to the frontal and temporal lobes of the brain.

A search of the literature does not reveal a similar case involving the breast and the pituitary gland.

#### PRODUCTION OF CONSTANT PLASMA PENICILLIN LEVEL

(L. E. Schaefer & I. A. Rashkoff, in *Jl. Mt. Sinai Hosp.*, Jan.-Feb.)

A constant plasma level of penicillin which is greater than that attained by a single daily dose of any previously investigated preparations may be maintained by the daily administration of 300,000 units of procaine penicillin in oil with aluminum monostearate.

This level, after the fifth injection, averaged 0.5 unit per c.c. at all times, and in no case did it ever fall below 0.2 unit.

A case of subacute bacterial endocarditis, successfully treated in this manner, is briefly reported.

FOREIGN BODY IN EYE.—When such is suspected but remains undetected, one should evert the tarsus and then stretch the cul-de-sac forward and convexly with a Walker or Fox lid everter.

## Extradural and Intradural Epidermoids

JOSEPH E. J. KING, M.D., New York City

ALTHOUGH this kind of tumor was rarely observed before 1920, many more are now recognized, due to the increased interest of the roentgenologists and neurologists and to the great increase in number of competent neurosurgeons throughout the country. Cruveilhier first described this lesion in 1829—more than an hundred years ago—and applied the name of “tumeur perlee” because of the mother-of-pearl appearance of the exposed surface of the lesion. In 1854, von Remak suggested the true origin; viz., an embryonic epithelial cell rest. Therefore, all these tumors are basically congenital, like a pilonidal or a thyroglossal cyst, although they, like the above named lesions, may not be recognized until the owner reaches adulthood. Although these tumors represent only about one-half of one per cent of all “brain or so-called brain tumors” they, in the beginning are benign, can be completely removed in a good percentage of cases if properly recognized, and a cure may be effected. When it is pointed out that over fifty per cent of “brain tumors” are malignant and, if removed, always recur, one appreciates all the more the importance of recognition and removal of these tumors. It is well known that a meningioma, though usually considered a benign tumor, may recur, not only once but many times, and result in the death of the patient. The word “cure” in connection with brain tumor removal should be used with caution, but epidermoids in general rank near the top of the group.

What is the origin of the tumor? Of what does it consist? And what is the histopathology of the lesions?

Epidermoids develop from an embryonic epidermal or epithelial rest. If the rest is in the diploë of the skull, the tumor is extradural or diploic in origin. Otherwise they develop from a similar epithelial rest and are intradural. Including autopsy findings, the latter predominate; but the former are in the majority with reference to complete removal and permanent cure.

Diploic epidermoids are of two distinct varieties. The less common type originates in the diploë, destroys the outer table of the skull and thins out the inner table. As the tumor grows, that portion of the outer table directly over the lesion is completely destroyed, and that portion about the periphery is of eggshell thickness. The tumor remains

extracranial beneath the pericranium, and in some cases it has been wrongly diagnosed for a number of years as a wen or sebaceous cyst. In some instances the lesion has been incised or partially excised repeatedly, and in late life the lesion may undergo malignant degeneration—as has been observed in sebaceous cysts. This type of tumor was well described by Bucy, and Rand Reeves.

The majority of diploic epidermoids destroys the inner rather than the outer table of the skull. As it slowly increases in size it completely destroys the underlying inner table, depresses the dura and underlying brain to an unbelievable extent, becomes adherent to the dura; and it may even perforate the dura in the central area with a knob-like portion protruding through, indenting the cerebral cortex, and thus become partially intradural in position. There may be, and usually there are, a few areas of destruction of the outer table, with smaller openings or lacunae and thinned-out portions of the outer table between the openings. On palpation, a mass, varying in size, may be recognized, and if a considerable portion of the outer table is destroyed a doughy feeling may be detected over these areas. We have never obtained impulse on coughing. The scalp over the tumor mass is elevated 1 cm. or more above the normal scalp, so one can readily detect the presence and position of the lesion by the simple expedient of running his hand over the patient's head. The signs and symptoms may be so slight that the patient first consults his physician because of feeling a bump on his head.

Then, of course, the final thought would be of x-ray films of the skull. What do they show?

In both varieties of diploic epidermoids, the films reveal a skull defect so *characteristic* that it should never be confused with any other lesion. From these films alone preoperative diagnosis can and should be made, and operation with complete removal in all except a small percentage of cases can be planned and carried out and the patient should be cured. I shall repeat the description of this defect as expressed in a previous paper:

“A typical cranial defect produced by the diploic type, in which the inner table is more involved than the outer, when viewed so that the greatest diameter of the defect is shown, has a scalloped, dense, clear-cut margin showing that this bony margin is more compact than the remainder of the skull. One or more bony hiatuses may be observed in the skull. These represent areas where the outer table of the skull has been completely destroyed.



These openings, if they exist, are more evident on stereoscopic films. The margins of these lesser defects may also be dense and sharply defined. Small pieces or detached islands of bone may be seen. The differentiating feature of the cranial defect, however, is the sharply defined, dense, white-scalloped margin which is found in no other condition. Any other eroding lesion, regardless of its nature, produces a defect in which the margin is less sharply defined, may be hazy, fuzzy and soft.

If the roentgenogram is taken so that one views the defect as though looking at a saucer edgewise, a dense line 2 mm. or more wide will be seen extending from the upper to the lower limits of the defect. This is due to superimposition of the dense margins of the defect which brings the compact bony margins in alignment. The outer table may be so thin as not be visible in an under- or over-exposed film. The characteristics of the defect are positive and unmistakable."

The lesions reported vary in size from 1.5 cm. to 10.5 cm. in diameter. The distinguishing characteristics of the defect are more accentuated in the x-ray films of the larger defects, the scalloped border is more marked, and the sharpness of the margins produced by the density of the bone at the margins is more evident.

In the other group of tumors under consideration—those which arise from an intradural epithelial rest—do not present *characteristic* roentgenographic findings, as do those which arise from the diploë. However, erosion and destruction of the petrous, the lateral wall of the sella, or the floor of any of the cranial fossae, especially when observed in repeated x-ray films made over a number of years, should make one suspicious of the nature of the lesion. The lining or covering membrane may be calcified, as was observed in a notable case reported by Horrax.

Of what do these tumors consist?

The only living portion of the tumor is its lining membrane 1 to 2 mm. thick, consisting of two layers—an outer connective-tissue or fibrous layer, and an inner epithelial layer consisting of stratified squamous epithelium. A third, innermost, layer will be seen on all sections examined under a microscope, but this layer is made up of desquamated epithelial cells, and, therefore, not living tissue. In the diploic type, the living membrane is better defined on the outer surface, while in intradural lesions the reverse is true. The outer, fibrous layer contains very few cells and supports the inner epithelial layer. It is usually thicker than the latter with a few scattered fusiform and stellate fibroblasts in a mass of intracellular fibres, and a few small blood vessels may be seen. However, no bleeding occurs when the membrane is stripped away from the smooth, eroded skull.

The inner epithelial layer of the living epidermal lining consists of four to twenty rows of superimposed epithelial cells, the outer being non-nucleated, flattened, and arranged parallel to the surface. The underlying inner epithelial cells are cuboidal and more perpendicular in position. For the most part the nuclei are preserved and keratohyaline granules are present in the cytoplasm of the cells.

Practically all of the mass of these tumors, which may weigh 100-200 grams or more, consists of dead, desquamated epithelial cells and other debris which shed off from the inner epithelial layer. These cells accumulate into a definite tumor mass for the reason that they cannot escape as from the surface of the skin. The outer portion of the tumor, the surface of which is seen after the lining membrane is stripped away, consists of beautiful smooth, pearly-white, lamellated material with the malleability of several layers of tinfoil, which readily splits into layers. The major portion of the tumor consists of an amorphous, grumous, homogeneous mass of crumbling, soft, caseous material, some of which is murky-white, some yellowish-brown and part of which may be brownish-green. Some portions crumble and fall apart when mashed between thumb and finger, while other portions have the feel of axle-grease and stick to the fingers. It is not so heavy as a solid fleshy tumor; e.g., a meningioma, of the same size. If the mass is placed in formalin solution it disintegrates and falls to the bottom of the jar like a sediment.

What results from the presence of such a tumor?

In the diploic type, with destruction of the outer but *not* the inner table of the skull, the mass may rupture spontaneously through the scalp, discharge its contents, refill and repeat the process like a sebaceous cyst. Or, if incised, similar results obtain. If incompletely removed, it will recur. Malignant degeneration of long standing lesions is not uncommon. If intracranial, they may, but probably will not rupture through the scalp. If there is no fistulous opening for discharge of the contents the material will accumulate, and the mass displace brain substance until death occurs from compression. Rupture of the contents into the meninges produces a *chemical meningitis*. The tumor may become infected and when opened is found to contain fetid material. In its growth it erodes bone with irresistible force and destroys it. If near the base any of the cranial nerves may be paralyzed from compression and infiltration of the nerve trunk with the cholesterol crystals, the presence of which in all these tumors accounts for the outmoded and incorrect term—*cholesteatoma*. Once these nerves are invaded with the crystals, recovery from the paralysis is not to be expected, even though the tumor is removed.



What should be done? All these tumors should be completely removed when possible. In most of those of the diploic type complete removal can be done. When the dura is perforated or so thin that the membrane cannot be dissected away from the structure, the dura should be resected and repaired with a fascia lata transplant. However, in some cases the depressed dura contains one of the large sinuses, thus ruling out dural resection. In these few instances resection of the overlying bone should be carried out, with removal of the greater portion of the membrane, scooping out the epithelial debris, thoroughly irrigating the remaining cavity, and cleansing it of the smaller particles. This should be followed by swabbing the cavity with Zenker's solution. In such instances reemptying the cavity of the reaccumulated epithelial debris may have to be done ten or eleven years later.

Complete removal of some, but not the majority, of the intradural lesions can be accomplished. When it is recalled that a portion of the wall of the cavity, especially in the depths, may be formed partly by the internal carotid artery, cranial nerves, pituitary body, etc., the inadvisability of attempt at complete removal is readily understood. It should be remembered also that a number of these tumors arise from epithelial rests in or near the midline, similar to congenital lesions in other parts of the body. Obviously these lesions can seldom be completely removed and slow refilling is to be expected.

On the whole, patients from whom these tumors are removed do well and carry out their work in the usual manner. One of my patients, Ben Moskowitz, had to be reoperated upon eleven years after the original operation. In this instance the tumor had originated in the posterior fossa, extended upwards, dissecting the lateral sinus and dura away from the skull and depressing the sinus and dura far forward and downward. Complete resection of the lining membrane, intimately adherent to the dura and sinus wall, was out of the question. This patient continues to show his gratitude by the annual presentation of Thanksgiving and Christmas turkeys!

#### METHYL-ISO-OCTENYLAmine (OCTIN) IN VASODILATING HEADACHES

(G. A. Peters et al., in *Proc. Staff Meetings Mayo Clinic*)

Octin relieves the pain of vasodilating headaches by acting as a vasoconstricting agent. About 50 per cent of patients may expect complete relief from headaches when octin is administered intramuscularly. Best results with this drug may be expected in the treatment of the typical migraine attack, poorer and more variable results headache due to nervous tension.

None of the patients experienced serious side reactions from the use of octin. The degree of hypertension which developed in three normotensive patients did not warrant discontinuance of the drug. We would not administer octin

to patients with hypertension.

Octin does not appear to be the drug of choice in the treatment of all patients with migraine and related headaches. Unlike the ergotamine preparations, it cannot be given intravenously, a disadvantage when prompt action is desired. The impression from reports by patients experienced with both ergotamine preparations and octin is that the former act more quickly and effectively. Orally administered octin does not seem to give as consistent relief as E. C. 110 (cafergine). It is suitable for use in normotensive patients and in those who do not obtain symptomatic relief from gynergen DHE 45. It is of particular value, in those patients who may have abused the use of the ergotamine preparations and in those for whom the use of ergotamine may be contraindicated. It also has the advantage of any new drug, affording renewed hope to those who have not been benefited by the usual remedies.

#### HYPOMETABOLISM OR HYPOTHYROIDISM?

(E. D. Robbins, Chicago, in *Miss. Valley Med. J.*, Jan.)

There are striking similarities and equally striking differences between persons with myxedema, and those with subnormal metabolism without myxedema. There are individuals with low metabolism who look and feel perfectly well; there are those with low metabolism who have headache, dizziness, weakness, chronic fatigue and nervousness. The latter may be so marked as to suggest *hyper-* rather than *hypo*-thyroidism. The physical appearance is not that of myxedema. Many patients who have the same complaints, but whose basal metabolism is normal, are often regarded as neurotic. Thyroid extract gave no benefit in the majority of these cases, even though the BMR could be raised to normal levels by large doses.

Use of more than one criterion greatly increases the probability of correctly estimating the thyroid function. For example, only one case in two of a BMR of  $-20\%$  or less may be due to myxedema. Four cases out of 10 with cholesterol above 300 mgm.% may be due to myxedema; but nine out of 10 cases with a BMR  $-20\%$  or less and cholesterol over 300 mgm.% have myxedema.

Hypometabolic patients may tolerate three to seven grains of thyroid extract a day. It is difficult to understand how such a patient can be considered *hypothyroid* when a patient with *no* thyroid gland can control untoward symptoms on gr.  $\frac{1}{4}$  to gr.  $\frac{3}{8}$  a day, and may develop toxic symptoms on 2 grains a day.

The final solution of this problem awaits identification and measurement of the true circulating thyroid hormone.

#### A FULL STOMACH

(W. F. Englebert, Tuscaloosa, in *Jl. Med. Assn. Ala.*, Feb.)

A 28-year-old patient at the Alabama State Hospital was gradually losing weight. He had been vomiting a little after meals but had no pains or other complaints. Examination was negative with the exception of a round firm mass in the region of the stomach.

In the x-ray picture of the stomach we counted nine bed springs, one bottle-cap, and many pieces of wire. At laparotomy the following articles were found: 14 cot springs, 31 pieces of wire, 41 rocks, two pieces of glass, one bottle-cap, one washer, two overall snaps, one small nut, one bolt, one spoon-handle.

It is not known how long these objects had been in the stomach. Many pieces of wire were pin-point sharp at each end and were four to eight inches long. The cot springs were  $2\frac{1}{2}$  inches long by  $1\frac{1}{4}$  inches wide and many places were badly eroded.

The stomach and abdomen were closed without drainage and the patient made an uneventful recovery, but it is feared that he may resort to a metal diet again in the near future.

## Cutaneous Manifestations of Systemic Diseases

ROBERT C. THOMPSON, M. D., Charlottesville, Virginia

THE skin has been called the mirror of the body. It reflects to some extent the state of health or disease. Physicians of past generations made maximum use of the examination of the skin and mucous membranes in diagnosis and prognosis. Today we rely more on laboratory procedures, and sometimes ignore significant skin lesions, or else fail to recognize their diagnostic value. Too, the skin is readily available for examination and no costly instruments are required. Good daylight, a stripped patient and keen eyes are needed. Often skin lesions are a clue in the diagnosis of systemic disease. Good examples are the purpuric eruption seen with the Waterhouse-Friderichsen syndrome and the blotchy, red, scaly eruption on the midface of patients having lupus erythematosus.

The practice of dermatology is largely that of cutaneous medicine. This emphasizes the relationship of cutaneous and systemic disease. A hundred years ago practically all dermatoses were regarded as limited to the skin. This was true of acute disseminated lupus erythematosus. This disease is now well established as a diffuse collagen disease involving the connective tissue of all the viscera and the skin. There are usually blotchy, red macules over the cheeks, nose, neck and extremities. Even psoriasis, long regarded as a pure skin disease, is now regarded by some dermatologists and research workers as a disorder of fat metabolism.

The skin, like other organs, is limited in its capacity to react to disease. Skin lesions may be initiated by a variety of stimuli including microorganisms, circulating toxins, allergens, hormones and drugs; organic and functional disturbances of innervations; alterations in the composition of the blood elements and a deficiency in vitamins and hormones. Skin lesions include erythema, urticaria, papulation, vesiculation, pruritus, seborrhea, purpura, atrophy, thickening, and hypertrichosis. The fact that the skin is capable of only a limited number of reactions makes it obvious that the same skin changes can be initiated by such diverse diseases as syphilis, leukemia and drug intolerance.

The skin manifestations of systemic disease may be broadly classified into two types. First, there are those skin lesions that are pathologically or

chemically identical with the systemic disorder. Examples are the true leukemic papules, nodules, and ulcers of the skin associated with the findings of leukemia in the bone marrow, blood and other affected organs and xanthomas of the skin associated with biliary cirrhosis or coronary sclerosis. More often, however, skin lesions are of the second type, that is, non-specific dermatoses that may be associated with systemic disease but usually occur independently. Well known examples are exfoliative dermatitis, urticaria, erythema multiforme and purpura. These lesions may be associated with, for example, the lymphoblastoma group of diseases but more frequently they occur in the absence of demonstrable systemic disease.

Two rare skin disorders that are associated with systemic disease in fifty to ninety per cent of cases are acanthosis nigricans and necrobiosis lipoidica diabetorum. Acanthosis nigricans is characterized by hyperpigmentation and a soft, verrucous, velvety hypertrophy of the skin ridges and furrows in the axilla, groin, neck and other areas where the skin is in apposition. Fifty per cent of these patients have or later develop a carcinoma, usually primary in one of the abdominal organs. The skin lesions themselves are harmless. A scientific explanation of the association of the two lesions is lacking though there are many theories. Necrobiosis lipoidica is a rare disorder of the skin of the extremities characterized by depressed red or yellow plaques. The surface of the plaques is shiny and appears to be covered with cellophane. Fine telangiectatic vessels course over the surface and the border of the lesions is usually violaceous. Most of the victims are females and up to ninety per cent have diabetes mellitus or at least a diabetic glucose tolerance curve. These two rare skin lesions and their systemic implications are mentioned to emphasize the close relationship between certain characteristic skin lesions and systemic disease.

It is not my intent to name and discuss all the skin lesions associated with systemic disease. Wiener<sup>1</sup> has coined the term "dermadrome" to signify those cutaneous lesions that go along with systemic disease and has published a book on this subject. Behrman<sup>2</sup> wrote a small book on the same subject. There are several articles in the literature that discuss various aspects of the same topic.<sup>3</sup> My intent is to classify some of the "dermadromes" and to elaborate briefly on a few that may be of general interest. The more specific and easily recognized "dermadromes" are usually the less common ones.

Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.

From the Department of Dermatology and Syphilology, University of Virginia School of Medicine and the University Hospital.

I will make no mention of such familiar findings as jaundice, edema, the acute exanthemata of childhood and senile skin changes as these are familiar to you all.

#### CLASSIFICATIONS

##### *Congenital*

Hereditary hemorrhagic telangiectasis  
Von Recklinghausen's disease  
Adenoma sebaceum  
Werner's syndrome

##### *Due to Microorganisms*

Tuberculosis  
Tularemia  
Syphilis  
Typhus  
Rocky Mountain spotted fever  
The systemic mycoses

##### *Metabolic*

Pseudoxanthoma elasticum  
Necrobiosis lipoidica  
Hemochromatosis  
Nevus araneus  
Gouty tophi  
Xanthoma

##### *Endocrine*

Keratoderma climactericum  
Acanthosis nigricans  
Diffuse scleroderma  
Addison's disease  
Dermatomyositis  
Myxedema

##### *Avitaminosis*

Follicular hyperkeratosis  
Angular stomatitis  
Sjögren's syndrome  
Pellagra

##### *Toxic*

Disseminated lupus erythematosus  
Erythema multiforme  
Erythema nodosum  
Toxic erythema  
Leukemids

##### *Malignant*

Hodgkin's disease  
Leukemia cutis  
Lymphosarcoma  
Metastatic

##### *Allergic*

Atopic dermatitis  
Urticaria

##### *Psychic*

Delusions of parasitosis  
Neurotic excoriations  
Feigned eruption

The congenital "dermadromes" are hereditary and fortunately uncommon. Hereditary hemorrhagic telangiectasis rarely develops before puberty. The dilated vessels are seen on the skin and on the mucous membrane of the mouth and nose. Enlargement of the spleen and cirrhosis of the liver may be found. Visceral hemorrhages are frequent. The disease is usually recognized by its skin lesions. Adenoma sebaceum usually appears in childhood and is manifested by small papules over the cheeks and nose. Many of these children have a low men-

tal and epilepsy. At autopsy "tuberous sclerosis" is found in the cerebral hemispheres and accounts for the symptoms. Von Recklinghausen's disease is more familiar. The skin contains one to several thousand soft tumors associated with brown macules. There may be cystic bone changes and tumors of the meninges, the peripheral nerves, or the viscera, causing many bizarre clinical pictures. Werner's syndrome is characterized by slight build, premature ageing, alopecia, canities, glaucoma, dry skin, hypogonadism, and diabetes mellitus.

Of more practical importance are the "dermadromes" associated with diseases caused by microorganisms. The skin lesions of syphilis are familiar and may be a clue to the diagnosis of severe disease of the nervous system, aorta or liver. The tuberculids are not common in the United States. They are caused by showers of tubercle bacilli lodging in an allergic skin. Often the lesions are typical and establish the diagnosis of tuberculosis. Tularemia is a frequent disease in this part of the United States. The initial lesion is commonly situated on the skin and the adjacent lymph nodes are enlarged. Hitch and Smith<sup>4</sup> noted a toxic skin eruption in some cases. It usually occurred during the second week of illness. Papules and iris erythema multiforme were the most frequent "dermadromes." Typhus and Rocky Mountain spotted fever are two rickettsial diseases that develop characteristic skin eruptions. In the latter disease the eruption appears first on the extremities and is macular but usually becomes purpuric and spreads to the trunk. Microscopic study of the skin shows swelling of the endothelial cells, edema of the perivascular collagen, and a lymphocytic infiltrate. The rickettsial bodies reside and proliferate in the nuclei of the cells. One of the systemic mycoses, coccidioidomycosis, is sometimes accompanied by erythema nodosum, called "the bumps" by residents of the San Joaquin Valley in California. This eruption is a manifestation of vascular hypersensitivity. Recently there has been noted the association of the systemic mycoses and leukemia. Perhaps the leukemia causes a lowered resistance to the fungus and allows it to invade the body.

Metabolic disturbances are prone to cause skin changes. Sutton believes that acne vulgaris is a lipoidosis. There is adequate proof that many of the xanthomas are associated with coronary disease, biliary cirrhosis, and diabetes insipidus. In some instances there is an elevation of the serum lipoids; in others they are normal but the body cells elaborate and store large amounts of lipoids. Xanthomas appear as soft yellow plaques on the outer surface of the eyelids or as yellow papules and nodules on the extensor surface of the elbows, knees, hands or feet. Patients with these lesions should have a careful history, physical examination, and



serum lipid determinations. Pseudoxanthoma elasticum, the name given to a yellow wrinkling and softening of the skin of the neck, axilla and groin, is of importance because of the frequent association of angioid streaks in the retinas and impairment of vision. Nevus araneus, a peculiar telangiectasis, has been shown by Bean<sup>5</sup> to be caused by the inability of a damaged liver to metabolize estrogenic hormone. The lesions are physiological during pregnancy and disappear after delivery.

Endocrine disturbances are prone to mirror themselves by suggestive and even diagnostic skin manifestations. Myxedema and Addison's disease are good examples. Keratoderma climactericum, a psoriasiform thickening of the palms and soles, occurs in women at the menopause and responds to estrogenic hormone. Diffuse scleroderma and dermatomyositis may belong in this category. The skin changes in the former are characteristic. There may be similar lesions in the esophagus, intestines, and heart. The skin changes in dermatomyositis are similar to those of lupus erythematosus, but the histopathology of the skin and muscle is different in the two.

The avitaminoses must be severe to provoke diagnostic skin changes. Follicular hyperkeratosis in vitamin A deficiency was established by Frazier and Hu.<sup>6</sup> Pellagra is a more prevalent example. It is often confused with contact dermatitis. Sjögren's syndrome, characterized by dryness of the mouth and eyes, enlargement of the parotid glands, and rheumatoid arthritis, was considered a vitamin A deficiency by Jeghers.<sup>7</sup>

The toxic skin eruptions are common. Dermatologists use the word "toxin" in a broad sense to include drugs, products of foci of infection, and intermediate products of catabolism. Billings<sup>8</sup> popularized focal infection as a source of toxic erythema. Erythema multiforme, erythema nodosum, and urticaria are often toxic in origin. The pathological physiology is increased capillary permeability.

Leukemids are histologically non-specific skin eruptions, varying from simple erythema through erythema multiforme to exfoliative dermatitis, accompanying leukemia.

Malignant "dermadromes" are not common. True leukemia of the skin and lymphosarcoma of the skin are the more frequent ones. True leukemia cutis may manifest itself as papules, nodules, ulcers or exfoliative dermatitis. Lymphosarcoma cutis characteristically is in the form of blue papules and nodules. Biopsy is needed to make a correct diagnosis. Occasionally the skin is the site of metastatic carcinoma.

Allergy may reveal itself in the skin as urticaria or atopic dermatitis. Asthma, hay fever, and other atopic states should be sought in persons with atopic dermatitis.

More and more attention is being given to psychosomatic medicine. The skin may reflect one's emotional status. Hyperhidrosis, rosacea, biting the nails, and some cases of pruritus belong here. Certainly dermatitis factitia, delusions of parasitosis, and neurotic excoriations are psychosomatic disorders.

#### SUMMARY

The skin shares in the body's reactions to disease. The availability of the skin as a diagnostic tool is emphasized. There are skin lesions that help make the diagnosis in systemic disease. Don't overlook them.

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#### AUREOMYCIN IN THE TREATMENT OF PEMPHIGUS

(P. L. Mathieu, Jr., in *R. I. Med. J.*, Jan.)

The cause of pemphigus is unknown. Its characteristics are the insidious or sudden onset of bullous or vesiculobullous lesions on normal skin and mucous membranes. Relapses and recurrences are the rule, with constitutional symptoms which usually result in death.

Treatment has been mostly supportive and unsuccessful.

Aureomycin in daily doses of two grams from April 4th to April 20th, over a period of 16 days, proved effective in practically clinically clearing a case of pemphigus vulgaris. Three times aureomycin was discontinued and the bullae promptly recurred. On a maintenance dose of eight 250-mgm. capsules daily, the patient on November 1st, 231 days after the onset of the disease is practically free from bullous lesions and in very good general condition. The total dose of aureomycin administered to date is more than 250 grams.

#### BELIEF THAT PREGNANCY CAUSES TOOTH DECAY REFUTED (Ed. in *J. A. M. A.*, Dec. 10th)

Statistical data on a large number of pregnant and non-pregnant women of different age groups led Day and Shourie to conclude that caries susceptibility does not increase as a result of childbearing. From similar evidence others concluded that the factors operating during pregnancy actually prevent tooth decay.

AUREOMYCIN is reported to be effective against whooping cough and lymphogranuloma venereum, and of little or no value in chickenpox and mumps.



# DEPARTMENTS

## HUMAN BEHAVIOUR

For this issue J. R. SAUNDERS, M.D., Editor, Richmond  
Member of the Staff of Westbrook Sanatorium

### PSYCHOTHERAPY AND THE GENERAL PRACTITIONER

BEFORE entering into the discussion of psychotherapy as applied by any one group of physicians, let us consider the question: what, indeed, is psychotherapy? Stedman's *Medical Dictionary* gives a very vague definition of psychotherapy as follows: "Treatment of disease by suggestion." Certainly no one could gain much information concerning psychotherapy from this definition. In its simplest form supportive psychotherapy consists of listening sympathetically to the patient without condemnation. The important part of the therapy boils down to simple reassurance and an attempt to make the patient understand the meaning of his symptoms and the nature of his conflicts.

The fact that the patient is able to talk to some one and can unburden himself of his difficulties may promote emotional release which is essential in any form of psychotherapy. Some of the major types of psychotherapy should be administered only by a psychiatrist, for it has proven extremely dangerous to uncover certain conflicts and complexes and then not to be able to proceed with the proper treatment. A situation much more severe may occur if this is allowed to happen.

No one should have a better understanding of psychotherapy than the general practitioner, for it is he who administers psychotherapy to a greater number of patients than any other member of the medical profession. The general practitioner is faced daily with problems that require psychiatric understanding. As a rule, he is the first to see a patient whose emotional problems have brought about symptoms either of a physical or mental type. The general practitioner should be able to recognize the part that emotions play in the production of the types of psychiatric disorders that he encounters frequently in his practice.

It has been stated that over half the patients who consult a physician do so because of problems relating directly to emotional conflicts. Too often the general practitioner, after extensive physical and laboratory examinations, will tell the patient, "There is nothing wrong with you," or, "you are only imagining that something is wrong with you." When a patient whose symptoms are due to an emotional disturbance is told this, his perplexity and bewilderment may lead to one of several

courses, each of them fraught with grave danger. The most likely course he will take is to consult some "quack," who, with some placebo plus strong suggestion, will give the patient temporary relief. A great harm has thus been done in two ways. First, the patient has lost faith in the medical profession as a whole; and, second, much valuable time has been lost in the treatment of this patient, because the essential psychologic problems remain, and quite likely sooner or later new symptoms will present themselves, much more refractory to treatment than the former and perhaps much more incapacitating.

The general practitioner understands much of the interrelationship between bodily functioning and various emotional states and how certain symptoms are constructed. To mention a few examples, he well knows that tachycardia is associated with fear, vomiting with disgust, headache with tension, etc.

It is true that a considerable number of patients presenting symptoms because of emotional disturbances, or conflicts in one form or another, cannot and perhaps should not be sent to a psychiatrist. Patients with mild or transient neurotic symptoms in which environmental factors predominate as the immediate cause, and those with mild anxiety symptoms, can usually be helped by their own doctor; also those patients with marital problems which are the result of lack of knowledge or understanding, and patients reacting to adverse changes in their life situations. No one has so good insight into these conditions as the family doctor, and reassurance, suggestion, explanation and education, with supportive medication as a temporary measure, are all that will be required.

Too often the designation of a patient as a neurotic by the home doctor means the end, for a time at least, of any effort to treat the patient. The diagnosis of a patient as a neurotic should mark the onset of treatment rather than its cessation. It should impel the physician to find out what is disturbing the patient emotionally. Consequently the diagnosis is very important for the future health and happiness of the patient.

It is important that all of us should be aware that conflicts get translated into physical disability, such as a paralyzed arm of a hysterical individual. Inadequate study of such an individual with subsequent therapy is about as treacherous as inadequate study and treatment of suspected carcinoma or incipient tuberculosis. This is said to illustrate the importance of the general practitioner being adequately oriented in regard to psychotherapy.

In conclusion, it can be said that the successful treatment of any patient depends upon the doctor-patient relationship. Since the family doctor, as a rule, has a much better rapport with the patient

than any one else, he is better able to administer most any kind of therapy; but it should be stressed again that, in treating a patient with neurotic symptoms, he should confine his therapy to simpler and more superficial methods than the psychiatrist. He must be aware of the danger of uncovering sensitive material before the patient can deal with it emotionally.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### WHITHER ANTENATAL CARE?

EXAMINATION of the mother for the presentation, contracted pelvis, and prevention of toxemia by repeated testing of the urine for albumin, for years absorbed the whole attention of the obstetrician, and in many clinics they are still the chief and even the only interest of those in charge.

At first the woman was asked to attend the clinic once or perhaps twice during the last weeks of pregnancy, because the emphasis was laid upon the measurement of the pelvis and the size and presentation of the baby. Testing urine for albumin was the only example of the care of function.

In those days it was uncommon to examine the woman at the beginning of pregnancy, to consider her general health, personality and social surroundings. The almost exclusive attention to structure led to an enormous amount of surgical induction of labour, and an ever-increasing practice of unnecessary Caesarean section. We were obsessed by the risk of difficult labour due to contracted pelvis diagnosed by minor reductions of the external measurements. If, for any reason, the head was high and could not easily be pushed down through the brim, the woman was in danger of having her labour induced.

Interference during the last month of pregnancy was practised on a large scale. In the peak year of 1921, no less than one in every 13 women admitted had their labour induced. There seemed to be no idea of the paramount part played by uterine function in meeting the minor difficulties due to certain abnormalities of structure. During the years after 1930 the maternal death rate was still rising and there seemed to be little achievement as a result of 15 or more years of antenatal care.

Throughout the wholeness of medicine we are liable to restrict the normal state within too narrow limits. An illuminating example is the diagnosis of pelvic contraction by minor reductions of x-ray measurements. It is true that small reductions may be related to difficult labour if the uterine contractions are continuously feeble, but it is also probable that a feeble uterus would find an equal

difficulty if the pelvis were larger than the standard normal.

There are few complications of labour, even including placenta praevia, heart disease, eclampsia and many others, which do not lose something of their potential danger if the uterus acts strongly. If the pelvis is slightly contracted, efficient uterine function can flex and mould the head, dilate the cervix, rotate a posterior occiput, exert pressure on a low placental site, cut short the number of eclamptic fits, and overcome perineal resistance.

Good uterine function depends primarily on the woman's emotional attitude to pregnancy and labour, and the behavior of her nearest relations. A *gynaecoid* woman has had a normal puberty, euphoria of pregnancy, is seldom sick or complains of the common minor discomforts. The *android* woman lacks the figure and form of the first type; menstruation has been painful, scanty and irregular. During pregnancy she has been troubled with vomiting, vague pains, heartburn and many other minor discomforts.

The diet of pregnant women in this country since 1939 has been a special care, and it must be that we owe to this something of the reduction in the number of stillbirths and neonatal deaths. Physical exercise during pregnancy in the last few years has been of value.

The tangible reality of such details as measurement, x-ray diagnosis, presentation and the other physical signs of the pregnant woman, may satisfy our minds as we look for the grounds of prognosis, but the figures of the Registrar-General during the early thirties showed that this form of antenatal care was a failure. We have not given enough attention to the part played in labour by uterine function. During pregnancy we can, by insight and experience, make a fair prediction of the probable course of labour, and by understanding, reassurance and confidence, do much to ensure that labour shall be easy and normal.

### THERE IS A WAY TO DETECT HIDDEN SYPHILIS

(A. L. Wolbarst, N. Y., in *The Merck Report*, April, 1949)

To discover hidden syphilis without running the risk of a false Wassermann: (1) there must be a complete physical examination, including exam. of the spinal fluid; (2) a careful study must be made of the previous history of the individual; (3) the blood must be sent to two or more laboratories. If they agree on the reaction, the report may be accepted as correct, especially if there is anything in the physical examination or in the previous history to corroborate the serologic finding.

If the reports disagree, further repeated tests, including the spinal fluid, should be made in different laboratories and the results studied and compared. In any event, no man or woman should be subjected to the risk of a false positive diagnosis of syphilis and intensive treatment on the basis of a single unsupported laboratory report.

Nobody knows how many thousands of innocent people have been labeled with the stigma of a disease they never had and have spent year after year undergoing treatment,

to say nothing of the resulting mental distress and worry. The public should be given these facts and should be warned not to accept as correct a diagnosis of syphilis based on a single unsupported laboratory report.

Viewed from another angle, there is no sense whatever in wasting precious penicillin and other drugs on men and women who are not syphilitic and never have been, just because some doctor or social worker has misinterpreted the laboratory report as a definite diagnosis of syphilis. A change in medical thinking on the Wassermann reaction as a guide to hidden syphilis is long overdue.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### THE MANAGEMENT OF VAGINAL DISCHARGES

FOUR of the common causes are 1) trichomonas, 2) monilia, 3) condyloma acuminata and 4) chronic cervicitis.

At the Cook County Hospital gynecologic clinic<sup>1</sup> 25 per cent of all cases of vaginitis are of the trichomonas type; symptoms are pruritus, soreness and acquired dyspareunia. Examination usually reveals a yellowish, bubbly discharge and a reddened vagina and vulva. The hanging drop of normal saline and a bit of the vaginal discharge will present motile trichomonads and establish the diagnosis (does not require staining).

The management is 1) prophylactic and 2) active. The woman is taught that after defecation the wiping of the anus must be done from before backward; no handling with unclean hands; not to use an enema tip for vaginal douching.

When an enema is taken place a pledget of cotton in the vagina.

Active: Twice weekly the vagina and labia are washed with Liquid Detergent (P. D. & Co.), one part to two parts warm water. When the vagina is dry with the speculum well opened, insufflate 2-4 grams of a powder—argyrol 20%; B. Lactose 40% and Kaolin 40% (Argypulvis, A. C. Barnes & Co.).

Avoid bleeding directly into the cervical canal during pregnancy because of the possibility of air embolism. The patient wears a sanitary napkin day and night to avoid staining her clothes. At home take nightly a douche (1 oz. white vinegar to 2 quarts water after which she inserts a capsule (Argypulvis) deep into the vagina, after perforating each end of the capsule three times with a safety pin and dipping into hot water. Patient is seen in office once or twice weekly. At each office visit the hanging-drop is examined for trichomonads. If the case does not respond readily, or recurs after cure, look for foci of reinfection—in the male the prostate, prepuce, bladder and urethra; in the female Skene's ducts, endocervix, Bartholin's gland, rectum and bladder.

1. W. J. Reich & M. J. Nechtow, Chicago, in *Ill. Med. J.*, Dec.

Monilia or yeast vaginitis causes eight to 12 per cent of leukorrhea, pruritus and vaginal soreness. Findings are grayish plaques adherent to vaginal mucosa. When wiped away capillary oozing will be noted. Often seen during pregnancy and in diabetics. Diagnosis is by hanging-drop technique—mycelia are readily seen in a high-dry magnification.

Prophylaxis is same as given for trichomonas vaginitis.

Active: Vulva and the vagina are washed with liquid detergent. After drying the cervix, vagina and labia are painted with a mixture of 1 per cent aqueous acriflavin and 1 per cent gentian violet. Patient takes a sodium bicarbonate douche at home (1 oz. to 2 qts. of warm water). Prognosis is good, but during pregnancy the condition requires frequent office visits. After the baby is born there is often a spontaneous cure. The office treatment for monilia is given daily.

Condylomata acuminata lesions vary in size, shape and location. Condylomata or papillomata are usually encountered on vulva, perineum, perianal region or intravaginally. If in doubt as to diagnosis a biopsy is advisable.

Treatment consists of the application of ointment containing 25 per cent podophyllin directly over the condylomata, protecting the normal surrounding tissue with vaseline, collodion or zinc oxide ointment.

Podophyllin ointment must be washed off with soap and water four to six hours after the application. Treatment is effective only in the soft type, does not affect the fibrotic type. The tumor shrinks and falls off; may be repeated once a week if necessary.

Chronic cervicitis is seen at all ages, especially common in the child-bearing woman, in almost all multiparous. A routine biopsy is indicated in cases of erosion or eversion, prior to cauterization. Each year one or two cases of early carcinoma of the cervix are seen, appearing grossly as an inflammatory lesion.

A nasal-tip electro-cautery is employed at only cherry-red heat to destroy the hyperplastic endocervical epithelium and the glands: endocervical cauterization, and the destruction of the ectropion or eversion. Both are done at the same sitting. Patient returns weekly for dilatation of the canal, using a simple probe, uterine dressing forceps or a cotton applicator.

No douching, nor sexual congress for the next 10 to 14 days. If further cauterization is necessary it should be delayed for three months.

### EFFECTIVE INSECT REPELLANTS

(Leon Goldman, Cincinnati, in *Arch. Derm. & Syph.*, Nov.)

A misquito and tick repellent known as NMRI-448 is effective for eight hours against mosquitoes and 12 days against ticks. Clothlin impregnation prolongs the period



of activity. As a repellent for chiggers recommend benzyl or benzoate preparations which are used on the feet and legs. In general, a cream type of repellent is preferable to a liquid type.

Mixtures of repellents developed by the armed services during World War II underwent controlled tests in regard to possible poisoning and irritation of the skin, he adds. As a result of such work, repellents available now are not likely to irritate the skin.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### THE VASODILATOR, RONIACOL, IN CORONARY AND OTHER VASCULAR DISEASE

A FIRST-CLASS DOCTOR,<sup>1</sup> whose experience of cardiovascular diseases has given him a knowledge of these conditions at once broad and deep, reports encouragingly on Roniacol.

Ronacol, which is converted in the organism to nicotinic acid, is a solid freely soluble in water and in alcohol. Aqueous solutions are practically neutral and may be given intravenously and intramuscularly if given with care.

Roniacol is furnished in 50 mg. tablets, scored so that a half-tablet may be used. Given by mouth the amount has varied from 50 mg. in single doses or as often as four times daily, to 800 mg. daily in divided doses. The most common dosage was 100 mg. three or four times a day. A great advantage of the drug is that it does not irritate the gastrointestinal tract, or adversely affect the blood or blood-making organs.

The typical reaction when an effective dose, usually 100 mg., is taken on an empty stomach begins in six to 15 min., with a sensation of warmth or tingling. When the drug is taken with food these phenomena are usually lessened, in some not manifested.

A new vasodilator substance, Roniacol, has been given clinical trial. In six cases of angina pectoris syndrome, due to coronary sclerosis, the improvement in range of activity permitted before the typical pain develops has been greater than the writer has been able to get from any other medication. This suggests that an effective degree of vasodilation has been produced in the collateral vessels in the coronary circulation. In three cases the drug was discontinued because of abdominal discomfort, discomfort from the flushing and paresthesia, and failure of relief, respectively. In peripheral vascular disease and indolent decubital ulcers in arteriosclerotic patients improvement in the circulation was readily demonstrated, and in two cases in the first category laid the bases for sympathectomy. A patient with Raynaud's disease has, in a short time, shown much benefit.

1. S. M. White, Minneapolis, in *Minn. Med.*, Feb.

Results so far justify further extended trial of Roniacol in coronary disease with the angina pectoris syndrome and in all forms of peripheral vascular disease where an effective vasodilator with a somewhat prolonged action is called for.

### MANAGEMENT OF ACNE VULGARIS

ACNE should be treated as soon as it starts; this by way of preventing scars and minimizing psychic trauma, as well as for the usual advantages of early treatment.

The site of the primary lesion is the sebaceous gland. Acne is an inflammation of a number of these glands. Washing three to six times a day with a bland soap—e.g., Ivory—and an abundance of hot water, then mopping thoroughly with cleaning fluid derived from petroleum, this followed with plenty of rubbing alcohol, will nip many a case of acne in the bud, so to speak.

Fanburg<sup>1</sup> contributes an article which recommends itself by not claiming too much. The substance of what he has to say is given.

In the treatment hormones have had a trial with no certain results; the androgens and estrogens are dangerous. Small doses of thyroid are useful in many cases. Nuts, chocolate, fried food, and iodized table salt should be eschewed. Vitamin A in large doses should be administered for several months, other vitamins being given with it for keeping the diet in balance.

In the topical treatment resorcin and sulfur have stood the test of time. Begin with 2% resorcin and 5% sulfur in a suitable vehicle. If the skin shows no irritation the strength of these agents may be increased to get adequate exfoliation. When dryness becomes excessive, keratolytics may be temporarily withheld.

Up to the age of 14 or 15 ultraviolet light may hasten exfoliation. In older patients, roentgen therapy under proper control is used with excellent results in 90% of acne cases.

An excellent aid in topical treatment in resorcin and sulfur in a cosmetic base applied in the daytime: the medications act over a long period of time. It boosts the morale of the patient as the lesions can be almost completely hidden. The product consists of a number of ingredients in a flesh-colored cake which is an easily carried compact.

The formula is isopropyl stearate 32%; lecithin 1%; lanolin 3%; cetyl alcohol 2; titanium dioxide 42; kaolin 6; ceresin 4; resorcin 2; and sulfur 8%. It takes several months to get the acne under complete control, but almost immediately reversal to normal in the patient's personality is accomplished.

1. S. J. Fanburg, Newark, in *Jl. Med. Soc. N. J.*, Jan.



## PEDIATRICS

ALBERT M. EDMONDS, M.D., *Editor*, Richmond, Va.

### ABDOMINAL EMERGENCIES IN INFANCY AND CHILDHOOD

HERE are portrayed only the information and troublesome cases which Everhart<sup>1</sup> has seen in private practice in the three years since his discharge from the service. The discussion does not include abdominal traumas, tumors, or poisoning.

When the presenting complaint is abdominal pain, attempt first to exclude extraabdominal causes, as pneumonia, pleurisy, pyuria, acidosis, and allergic states, crystalluria, and central nervous system disease. Five children with poliomyelitis were seen this past year, in each of which abdominal pain was the presenting symptom. Two were physicians' children. Since all had an inflamed throat and one a pneumonia, in addition, one can only speculate as to whether the pain was caused by the respiratory infection or by the poliomyelitis.

Intraabdominal Causes: "Is this a surgical emergency?" in which infection and obstruction are the causes of the chief symptoms, as of abdominal pain and tenderness of mesenteric adenitis accompanying an upper respiratory infection? After years of trying to formulate a satisfactory differential diagnosis between mesenteric adenitis (so-called tonsillitis of the abdomen) and appendicitis the subject remains just as cloudy whenever the problem presents itself. Share the responsibility with a surgeon. Since vomiting, pain, tenderness, voluntary rigidity, fever, leukocytosis, as well as an inflamed throat are often present in both conditions, we usually observe the patient for a day; remembering, of course, that appendicitis may also be a complication of an upper respiratory infection. When doubt exists it is safer to explore.

Pain and tenderness in the right lower quadrant of an acute catarrhal jaundice in the absence of an epidemic is easily missed if the patient is seen under artificial lights and one fails to ask the color of the stools and urine.

Inflammatory lesions of Meckel's diverticulum simulate appendicitis so closely that a differentiation is seldom possible. In diverticulitis there is usually no shifting of pain or maximal tenderness to the right lower quadrant as in appendicitis. Since the treatment is the same it little matters whether the proper diagnosis is made preoperatively. What is important is that a Meckel's diverticulitis should be searched for in case the appendix should be incriminated at operation.

The pain of intussusception, the most common cause of fixed obstruction in infancy and childhood, is sudden, sharp, severe and recurring, ac-

companied by vomiting and shock, early. Tenderness and rigidity are usually not present in the first 48 hours, but do occur when peritonitis begins.

Hemorrhage from the gastrointestinal tract constituting an emergency has been from intussusception, hemorrhagic disease of the new-born, Banti's disease with bleeding esophageal varices, and ulceration of Meckel's diverticulum.

Three cases of congenital hypertrophic pyloric stenosis were seen. One in a month-old boy referred because of repeated vomiting, constipation, and fever. The t. was 103.6°, neck and back rigid, reflexes hyperactive, pupils widely dilated, abdomen greatly distended with peristaltic sounds absent; lumbar puncture normal fluid. Then it was learned that one drop of 1 per cent atropine had been given prior to each feeding for the past two days. After combating the abdominal distention, peristaltic waves and projectile vomiting were observed and a pyloric tumor easily palpated.

With the exception of an incarcerated inguinal hernia in a 4½-month infant, intussusception was the only type of acute obstruction observed. Congenital obstruction may be due to a defect in development, or to pressure by tumors, hernias, peritoneal bands, and congenital volvulus.

Obstruction in the duodenum causes vomiting at once, which is persistent; of bile if the obstruction is below the ampulla of Vater—the usual condition. In addition to the rapid loss of weight, dehydration and constipation, abdominal distention and visible peristaltic waves are frequent features.

Conditions to be excluded other than pressure by tumors, hernias, peritoneal bands, and congenital volvulus are tracheo-esophageal fistula, pyloric obstruction, meconium ileus, imperforate anus. Pyloric obstruction, whether stenosis or spasm, usually does not show symptoms before the 10th day of life nor does the vomitus contain bile. Meconium ileus, an obstruction due to the dried putty-like meconium, should be suspected in the vomiting infant who has failed to pass a stool.

#### BRAIN TUMORS IN CHILDREN

(S. A. Sandler, Hackensack, in *Jl. Med. Soc. N. J.*, Feb.)

The first symptoms of brain tumors may be persistent vomiting, with some impairment of ocular convergence and other cranial signs, motor weakness or ataxia, in the absence of fever. One of the early signs of pontine tumor may be a change in personality, evidenced by increased irritability and temper tantrums.

About 70% of all brain tumors in children originate in the cerebellum. Many of these youngsters have a surprisingly high intelligence, are pleasant, ingratiating, and co-operative.

Brain tumors in children may occur in spite of normal spinal fluid pressure, negative x-rays, and normal pneumo-electroencephalographic findings.

There is a need for greater alertness regarding the possibility of brain tumor in children because early diagnosis

<sup>1</sup> I. M. W. Everhart, San Angelo, Tex., in *New Orleans Med. & Surg. Jl.*, Jan.

will often determine whether the patient will survive neurosurgery.

Convulsive attacks in children (with vomiting or definite neurologic findings) make it imperative to consider the possibility of a cerebral neoplasm.

#### THE EARLY DIAGNOSIS AND TREATMENT OF PERTUSSIS (B. O. Barnes & Pat Mason, Kingman, Arizona, in *Arizona Med.*, Jan.)

Whooping cough has become the most feared disease of infancy. In an epidemic in a small town, the virulence of the strain may be judged by the fact that many youngsters immunized one to 10 years previously develop the disease. The first two cases recognized were in children 10 and 11 years old and whooping cough was not suspected until the differential blood smear revealed the high percentage of lymphocytes.

Three babies died suddenly in the local hospital undiagnosed, but a postmortem blood smear on the third revealed a leucocyte count over 50,000 with 95 per cent lymphocytes. Subsequent events left little doubt that the two previous deaths, likewise, were due to pertussis.

Experience with the present epidemic indicates that the number of lymphocytes increases with the onset of symptoms and this increase is quite definite long before coughing begins.

Twenty-three patients received antipertussis serum (Wyeth). The impression was gained that prompt clinical improvement was obtained if the serum was given early in the course of the disease.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### RESUSCITATORS NOT AS EFFECTIVE AS SIMPLER MEANS OF ARTIFICIAL RESPIRATION

FIREMEN and ambulance riders, with their "pulmotors," we have always with us. In a few months bathing-beach "experts" will take up their seasonal jobs.

Shapiro<sup>1</sup> has something to the point to say.

The total failure of either respiration or circulation must be extremely brief if recovery can occur. The length of time depends on the condition of the cells at the moment of cessation of respiration, and varies from a few seconds to 9 to 10 minutes. The more specialized centers of the central nervous system tolerate oxygen deprivation poorly. Methods of resuscitation, to be effective, must be instituted promptly and must transport O<sub>2</sub> efficiently until normal activity is restored.

Corrylos considers that the mode of resuscitation that has consistently given him the best results in cases of severe asphyxia is immediate mouth-to-mouth insufflation. It allows of immediate administration of the correct mixture of CO<sub>2</sub> in O<sub>2</sub> under the right conditions of moisture, temperature and pressure, and at the proper intervals. The rescuer will more readily appreciate defects in the methods, such as an obstructed airway and inadequate or excessive exchange:

Mechanical apparatus, constructed partially of rubber, which deteriorates, or intricate machinery, which may get out of order, or weighty substances difficult to transport, may cause delay in application. If resuscitation is attempted with apparatus as promptly and as intelligently as with manual maneuvers, or direct inflation, the result may be as good, but not better.

Yandell Henderson points out: "The popular but fallacious assumption on which the invention of all pulmotors, resuscitators, and other artificial respiration devices is based, is that restoration of respiration in a non-breathing patient is like starting the motor of an automobile; in other words, if the thorax is put through the movements of breathing by vigorous 'cranking' it will pick up the rhythm and continue to run. Natural respiration is induced only by chemical, and not mechanical, conditions; and these conditions are the supply of O and CO<sub>2</sub> through the blood from the lungs to the respiratory center at the base of the brain."

It would seem, then, that the indications for the use of a mechanical resuscitator are few, if any. In a well equipped hospital, with a modern anesthesia apparatus available, and trained anesthetists to use it, resuscitation is more efficiently accomplished with this than with a mechanical resuscitator. In the field, a resuscitator is not immediately available and recourse must be had to manual methods or mouth-to-mouth insufflation.

We live in a mechanical age, and are apt to be impressed by machines, often more particularly when we do not understand them.

#### THE COMPARATIVE EFFECTIVENESS OF METHYLERGONOVINE TARTRATE (METHERGINE) AND ERGONOVINE IN THE THIRD STAGE OF LABOR

(L. M. Riordan, St. Louis, in *Jl. Mo. Med. Assn.*, Feb.)

One group of 97 women in labor were given 1.0 c.c. of a solution containing 0.2 mg. of Methergine intravenously as soon as the infant was delivered over the perineum. Another group of 100 women were given 1.0 c.c. of a solution containing 0.2 mg. of ergonovine intravenously at the same time and in the same manner.

The effectiveness of Methergine was compared to ergonovine in preventing blood loss during the third stage of labor in a series of 197 patients. In the Methergine group 76.3% of patients lost 100 c.c. or less blood as compared to 64% of the ergonovine group. The intravenous use of powerful oxytocic drugs following delivery of the infant requires prompt, gentle expression of the placenta.

Methergine is more effective in preventing loss of blood during the third stage of labor in a larger percentage of patients than is ergonovine.

#### THE STOMACH OF THE RECENTLY DECEASED (A. W. Williams, in *British Med. Jl.*, Jan. 14th)

It is a popular and widely accepted opinion that chronic gastritis is a common condition, but the truth is that in clinical practice, in the majority of cases, we do not know whether it is the man or his stomach that is at fault. Meanwhile vast quantities of stomach sedative will continue to be prescribed at no mean cost to the State.

<sup>1</sup> Cecile Shapiro, South Africa, in *Amcs. & Analg.*, Jan.-Feb.

Magnus examined over 30 stomachs fixed shortly after death in patients whose principal disease was not gastric. My own series includes 62 unselected post-natal stomachs, the majority of which were adult, and 10 foetal stomachs. There were all formalin-fixed according to Magnus' rulings.

Ten of the cases showed one or more ulcers in the stomach—i.e., 15% of the adult stomachs. Acute ulcers were present in four stomachs and chronic ulcers in seven. The average age of the patients with ulcers was 67. In no instance had ulcer been diagnosed during life.

Erosions were discovered in 30% of the non-foetal stomachs. Many of these were agonal.

It is suggested that a vascular origin for erosions and ulcers is commoner than has been supposed.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### ACUTE RENAL INSUFFICIENCY FOLLOWING TRANSFUSION

In the immediate emergency period, the first twelve hours, administration of water and electrolyte leads only to pulmonary edema and necessitates phlebotomy. The therapy of this period is the management of shock with whole blood and plasma.

The second period, seven to 14 days, is the period of anuria and oliguria. *Most deaths during this period are due to overtreatment with fluid and sodium salts in an effort to cause urine output.* In oliguria and anuria, fluid retention leads to pulmonary and cerebral edema. A total fluid intake of 1000 c.c. per day, under usual circumstances of environmental temperature and humidity, is sufficient to maintain hydration, which has already been attained during therapy of the immediate emergency period.

To correct acidosis sodium bicarbonate by mouth, or intravenously in a 5% solution is effective. Excessive alkali should not be administered. Alkalosis causes oliguria and renal insufficiency. Alkalinization of the urine may be impossible during this period.

During complete or nearly complete suppression of urine, complete restriction of salt intake is in order, unless there is copious loss of chloride in the vomitus or diarrheal stool. Chemical examination of the blood and urine is necessary to determine the daily requirement of sodium chloride, or sodium bicarbonate.

There may occur a secondary anemia during this second period which is independent of blood loss. If the hemoglobin is not below 7-8 Gm. transfusion should be deferred until urine output is adequate. If anemia is severe, small transfusions (100 to 250 c.c.) of red blood cells are indicated.

The hypocalcemia of the acute uremic state, 1. Irving G. Kroop et al. in *Jour. Mt. Sinai Hospital*, March-April.

with its muscular twitchings, is treated with intravenous calcium gluconate. Oversedation should be avoided. Paraldehyde may relieve hyperexcitability.

In the presence of heart failure, digitalis is indicated; since excretion of the drug is greatly limited, maintenance dosage is to be determined very cautiously.

A very low-protein, high-carbohydrate and high-fat diet is given, and concentrated carbohydrate intravenously is instituted if vomiting is troublesome. Vitamin deficiency is unlikely to occur.

The aim is to maintain life until the time of diuresis and recovery.

In the period of diuresis and beginning convalescence the aim is to maintain water and electrolyte balance despite copious loss of water during diuresis. Sodium and chlorine are usually lost in the urine in large quantities and must be replaced. The same applies to water.

It is important to know that there are instances of tubular dysfunction where sodium and chlorine are retained in excess of water. Under these circumstances administration of sodium chloride would be disastrous, leading to pulmonary and cerebral edema.

Determinations of chloride in the blood and urine are essential in determining whether sodium chloride is to be administered.

With improvement in renal function, the blood constituents gradually return to normal. Appetite returns. A regular diet is tolerated, and fluid intake parallels the urinary output. During the period of convalescence it is essential to employ a high-calorie diet.

*Even now the general idea is that best treatment of anuria includes much Na Cl and much water, by vein or under the skin.*

Restrain that impulse.

## DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

### SENSITIZATION TO DENTURE MATERIAL AS A CAUSE OF ANGULAR STOMATITIS

In a book on Allergy published a few years ago nearly a thousand articles were tested as having caused manifestations called allergic. Denture material did not appear in the list.

A British dental surgeon<sup>1</sup> supplies this deficiency, and so serves notice on doctors of dentistry and of medicine that this possibility should be borne in mind.

Stomatitis arising from sensitization of the buccal mucous membrane to the material of which dentures are made has been recognized for many

1. H. R. Vickers, in *British Med. J.*, Nov. 12th.



years. "Rubber sore mouth" has been known ever since Thomas W. Evans, of Paris, introduced (in 1844-5) vulcanite as a base for the construction of artificial dentures. The condition is mentioned in many of the standard dermatological textbooks.

The patch tests in the cases here described were performed by taking scrapings from the denture which was suspect and leaving these moistened scrapings in contact with the skin of the upper arm for 48 hours. There was no difficulty in reading the results.

In addition to the cracks at the corners of the mouth, the one feature common to all patients was redness and engorgement of the whole of the mucous membrane which came into contact with the denture. The sharp line between the red, inflamed denture-covered part of the hard palate and the adjoining normal uncovered part was striking.

In some cases the mucous membrane of the cheek was also affected, and one case had superficial inflammation of the part of the tongue in contact with the denture. All have been cured by changing their type of denture.

These cases establish the association between denture sensitization and angular stomatitis. It is of interest that all these patients were in the habit of keeping their artificial teeth in at night, and it is reasonable to postulate that such a practice leads more readily to the establishment of a contact sensitization. In view of the numbers of dentures worn this condition is uncommon, but in all the seven cases the gum sensitivity was discovered only by direct questioning and examination, so that probably many cases are missed.

## HISTORIC MEDICINE

### THE ROLE OF DISEASE IN THE 70,000 CASUALTIES IN THE AMERICAN REVOLUTIONARY ARMY

POSSIBLY facts adduced by Gibson<sup>1</sup> as to what was endured by our ancestors in the gaining of our liberties will influence us not to foolishly vote away these precious possessions.

In the seven years of War for Independence contagious diseases accounted for 10 times more deaths than British guns. Exposure, undernourishment and neglect of sanitation sent soldiers into hospitals. Here, bedded side by side with smallpox and typhus patients, they had but little chance to escape infections. A foreboding of what might happen if hospitalized, caused many a sick soldier to desert. In one of the Bethlehem hospitals, it was recorded that five patients died on the same straw before it was changed, and several of these victims had been hospitalized for only slight disorder.

Smallpox and typhus were the two most dreaded diseases of the American Army, though a malignant dysentery also took a heavy toll. Many of the Colonies had laws punishing the practice of smallpox inoculation with fines and imprisonment, while a few permitted it in specified towns under strict regulations. One person in 300 died of smallpox by inoculation, to one-sixth of those attacked by smallpox germs in the regular way. Massachusetts anticipating the appearance of smallpox directed that a hospital be designated for the eventuality, shortly after the Battle of Bunker Hill.

When General Washington arrived at Cambridge on July 2d, 1775, he found 9½ per cent of the Army either sick or unfit for duty. On November 27th, Washington reported Boston rife with smallpox, and that General Howe had ordered 300 of the citizens who had been inoculated to leave, with a design of introducing smallpox among the American soldiers.

Troops to the number of 2,000 were enrolled under General Schuyler to advance into Canada. When sickness reduced the number to 500, Schuyler sent an urgent appeal to Congress for reinforcements, medical men and hospital supplies. Illness compelled Schuyler to relinquish his command to General Montgomery, who with the force increased to 2,000, captured St. Johns and Montreal. Again the Northern Army was reduced to 500 fighting men by expiring enlistments, sickness and desertions.

Benedict Arnold gathered a hardy band of 1,100 men to march toward Quebec through uncharted forests. Only a few of the men died enroute, but many suffered from dysentery, pneumonia and rheumatism; snowstorms impeded progress, and it became necessary to make Camp and to build a crude hospital for the sick. A number were weakened by cold and exposure, others turned back, so on crossing the St. Lawrence only 600 remained. Arnold made Camp and waited for Montgomery to join him. This addition of only 300 men brought smallpox with them. Only 675 soldiers fit for service when the Quebec Citadel was assaulted on New Year's Day of 1776. Montgomery was killed. Arnold incapacitated by a bullet in his knee, and most of the officers, with 383 of the soldiers were made captives.

A Congressional Commission, which included Franklin and Adams, had arrived at Headquarters and Arnold sought and obtained their approval of a plan to inoculate the entire Army, one Regiment at a time. The Supreme Commander threatened death by a firing squad to anyone applying for or receiving the treatment. This officer, General Thomas, within five days became a casualty to his own insane prejudice.

1. J. E. Gibson, in *Trans. Col. of Phys. of Phila.*, Dec., 1949.

With the assembling of a large force in the summer of 1776, of men recruited from different Colonies, typhus fever made its appearance. Dr. Morgan attempted an arrangement with the British, by which all hospital patients and their attendants might be considered non-combatants, and not subject to capture and retention as prisoners of war.

Success at Trenton and Princeton put new heart and hope in the Colonists, and recruits flowed into the Camp that Washington established at Morristown. Here again smallpox became an epidemic, and on February 16th, 1777, Congress directed the Commander-in-Chief to arrange for the inoculation of all enrolled troops as well as recruits, before they reported for service. The American Army then numbered 17,449, but 26 per cent of the whole force were in hospitals or unfit for duty.

There was little serious illness among Valley Forge soldiers during the early days of encampment; but many needed hospitalization, the result of exposure, lack of warm clothing, and proper food. March 22d, 1778, Dr. Cochran, of Washington's Staff, notified Dr. Potts, the Purveyor General, that a large number of recruits who had not had smallpox, were expected and would be inoculated.

Every hospital requisition for medicines contained a demand for many Pipes of wine for fever patients. Dr. Potts recorded that the amount he spent for wine exceeded that needed for bread for the whole war.

The British had 38,000 soldiers at New York. In September, 1779, an influenza epidemic which spread so rapidly that 6,000 were infected in a six weeks' period. The British decided to transfer their offensive to the South. Washington considered this possibility as early as 1777, and had written to Governor Patrick Henry suggesting the Virginia law prohibiting inoculation be repealed.

Dr. Hugh Williamson, of North Carolina, after the Battle of Camden, entered the enemies' lines under a flag of truce to ascertain conditions among the American captives; he then addressed a letter to the British Chief Physician, saying it appeared that Lord Cornwallis had not yet given any attention to the sick and wounded prisoners; that he had found it impossible to render relief to 240 of them, suffering from 700 wounds. Williamson further wrote that smallpox had broken out in the British Camp, and his request for permission to inoculate the American prisoners had been refused. The doctor then addressed a communication direct to Lord Cornwallis, and consent was eventually obtained. Williamson found that 400 Americans were affected, and further that, of 1,900 captives, 800 had already died. All of the prisoners were in great distress, in need of clothing and food. This suffering was so great that 530 sought relief by

enlisting in the British Army. When a general exchange of prisoners was arranged in 1781, only 740 of the American captives were still alive.

The British Army was afflicted with the same sickness that prevailed among the Americans, and at times special detachments were entirely incapacitated. When Cornwallis surrendered at Yorktown, he reported 16 per cent of his Army incapacitated by sickness.

Dr. Shippen inspected one of the French Virginia hospitals and reported their patients were very neat, clean and supplied with every necessity, even with night caps. He also commented, that French physicians were no more successful than the American in their treatment of wounds and sickness.

Dr. James Thacher, who served in many hospitals and kept a Journal containing his observations, estimated the total casualties of the War as 70,000, a yearly average of 10,000. This total would increase were it known how many of the soldiers sent home to recuperate or die survived.

The United States War Department's tabulation indicates that 250,000 men were engaged in the War for Independence, but that no more than 40,000 were engaged in any one year. These figures indicate a 25 per cent annual average loss from sickness and wounds.

Dr. James Tilton put it mildly when he wrote: "More Surgeons died in the American service than Officers of the Line; a strong evidence that infection is more dangerous than the Weapons of War."

POSSIBLY facts adduced by Gibson<sup>1</sup> as to what was endured by our ancestors in the gaining of our liberties will influence us not to foolishly vote away these precious possessions.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### HOSPITALS, MEDICINES AND PREPAID MEDICAL CARE

A BOSTON EDITOR<sup>1</sup> writes on some of the weak features of sickness-care insurance. Read carefully and you will see amplification of what *Southern Medicine & Surgery* has contended all along.

THE popularity of such voluntary plans as Blue Cross and Blue Shield indicates a willingness, or at least acquiescence, on the part of participants in these or similar plans to support such organizations as long as they continue to provide in a satisfactory manner the services for which they have contracted. There can be little doubt that if such plans fail, the clamors for the Government to provide these functions will increase and become irrepresible.

As in any insurance business, the value of all benefits *plus administrative costs* must be covered

1. *New England J. of Med.*, Feb. 16th.

by the premiums paid in.

The steady rise in the cost of hospitalization has placed a great burden on the prepayment plans, and only part of this increase could be met by any acceptable increase in the premiums. This has necessitated additional payments by the participants for part of their hospitalization costs.

The cost of many kinds of medications has now also increased greatly, and payments for such medications are generally included among the benefits of prepayment medical programs. This is true, however, only when they are administered during the period of hospitalization. This provision has become a source of abuse by many physicians and is potentially a very serious one. Patients who could readily be treated at home, and many who could equally well be managed on an ambulatory basis, or are being treated by the physician in his office, are sent into hospitals to occupy beds and to make use of hospital services that they do not need, simply to obtain the benefits of some expensive medication. The physician may, rightly, regard this as the only way by which his patient can derive the benefit from a therapy that is more expensive than he can afford. Most of these contracts, like those of the Blue Cross and Blue Shield, do not cover treatment outside hospitals. The inclusion of such benefits to office patients or to those treated at home would be subject to even greater abuses, and would tremendously increase the cost of medical prepayment plans, possibly beyond the reach of a large proportion of those now participating.

It is not difficult to anticipate that the release of important drugs, such as Cortisone and ACTH, for general distribution at necessarily high cost, could within a very brief period completely exhaust the resources of any prepayment medical organization. It would be well for hospitals, physicians and directors of medical-care organizations to give this matter serious consideration and to make some provisions for curtailing these abuses. Politicians interested in solving all medical problems of finances in one fell swoop are waiting eagerly for just such developments. The medical profession, if it is to maintain any independence from political control, must help to prevent the abuses by solving these problems in time to avoid disaster.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### SUCTION FOR REMOVAL OF THE GAN- GRENOUS APPENDIX

REMOVAL of a badly inflamed, friable, or gangrenous appendix is facilitated by suction, using a glass tube; the hazard of breaking or bursting of the appendix during excision is lessened, and

peritoneal and wound surfaces are protected from contamination. So says Devine,<sup>1</sup> and it is obvious that he speaks truth, astonishing that surgeons everywhere have not been using this device for 50 years.

A set of five tubes 7 inches long, int. diam. 5/16 to 3/4 in. should be kept on hand, although the 3/8 in. size is usually satisfactory. An appendix somewhat thicker than the tube will fit when suction is used. Thin, light tubing and slight suction controlled by a spring and a screwclip are sufficient.

The tip of the appendix is gently drawn into the container as far as the mesoappendix, the latter is divided, and tissue is covered down to a hemostat on the base. A curved tube is best when the base of the appendix is deep in the abdomen.

If the tip is out of sight or beyond reach, the proximal end of the appendix is crushed, tied, divided and the tube applied to the cut end. Adhesions are often separated by suction plus a mere touch with scissors or blunt dissectors, the smooth edge of the tube finding the natural plane of cleavage as the appendix is slowly sucked up.

With heavy infection retrograde removal may be advisable, since the circulation is cut off promptly and the most inflamed tissue isolated last, after minimal intraabdominal handling.

1. John Devine, Melbourne, Australia, in *Lancet*, Feb. 5th, 1949.

### ADRENAL INSUFFICIENCY IN INFANTS

(J. C. Jaudon, St. Louis, in *Miss. Val. Med. J.*, Mar.)

Adrenal hemorrhage should be suspected in any newborn infant showing unexplained signs of collapse with rapid, shallow respirations suggestive of telectasis or pneumonia, unstable  $\text{Ca}^{++}$  and signs of hemoconcentration are common findings. The prompt administration of large amounts of whole aqueous adrenal extracts and restoration of blood volume, is followed by prompt improvement.

Any physician who is confused because of the unsatisfactory response to the usual therapeutic measures in an infant who presents symptoms of protracted gastrointestinal disturbances, failure to gain weight and unexplained tendency to dehydration, is urged to consider the possibility of "salt and water" hormone deficiency. The finding of large amounts of chlorides in the urine during periods of dehydration is a simple and helpful means of screening patients with this disorder. Desoxycorticosterone acetate and sale are of specific therapeutic value in this disease.

### EDEMA OF THE VULVA IN PREGNANCY

(D. A. Bickel & P. G. Seyler, South Bend, in *Ill. Indiana Med. Assn.*, Mar.)

Massive edema of the vulva is not a common complication of pregnancy. It is even an infrequent accompaniment of, although almost invariably associated with, toxemia of pregnancy, cardiac or renal disease, or hepatic disease involving obstruction of the portal system.

The cases presented were part of the general picture of toxemia of pregnancy. All of the cases become progressively worse as the pregnancy progressed. All were rather resistant to the usual medical management. Termination of the pregnancy resulted in a rapid return to normal in all the cases, suggesting a hormonal or mechanical etiology of the condition.



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*As is true of most Medical Journals, all costs of cuts, must be borne by the author.*

A PRACTICAL AND INEXPENSIVE  
"SCREEN TEST" FOR CANCER?

CONTRIBUTORS<sup>1</sup> to one of our best journals report experience with a test which, after allowing liberal discount for possible over-enthusiasm, should become an integral part of routine examinations performed in offices of physicians and dentists, in hospitals, clinics and public health surveys. It requires, we are assured, a minimum of time and equipment and one soon acquires proficiency in the interpretation of clot retraction patterns. If, with this procedure, a suspicious or positive diagnosis is made, it may be corroborated or disproved in special laboratories where the more complicated tests are employed.

The test is one for measuring the blood sedimentation rate at the bedside—simple, rapid and accurate. The finger or earlobe is well-cleansed with alcohol, allowed to dry, and pricked. The drops are lightly touched with a clean glass slide, the slide righted, the drops allowed to air dry. Thorough examination is then made under the low power of a microscope, or even a hand-magnifier. A diagnosis may be made as soon as dry, in 5 to 10 min. It is preferable to let the slide dry overnight before rendering a final verdict.

If the drops are too thick a cancer patient's blood may show a normal pattern; if the puncture is too shallow, necessitating extreme pressure to obtain sufficient blood, an excessive amount of serum will be expressed, and the pattern of a normal person may be suggestive of cancer.

Proficiency in diagnosis is acquired by routinely studying clot retraction patterns obtained from patients suffering from various diseases, or, who are "apparently" in good health. In this way, one becomes familiar with normal, suspicious and positive synergetic patterns—a prerequisite for correct diagnosis. The *occasional* use of the test is not advised. The *routine* use of the test on every patient supplies a permanent record of the multiplicity of patterns which may be encountered in various clinical conditions. Its utility depends upon the correct interpretation of the synergetic pattern—developed only through constant usage.

Several contrasting photo-micrographs demonstrate the different patterns which one may encounter.

Normal patterns have a uniform background with a definite fibrin network spanned across it. Few vacuoles are present and the impression is one of complete unity.

In positive configuration, a broken fibrin network is observed. Large "lakes" are formed here and there among the red cells which cling together in-

1. N. P. Norman & Anna M. Slicher, New York City, in *Amer. J. Dig. Dis.*, Feb.

stead of being evenly distributed. A positive pattern does not indicate where the cancerous growth is located; it indicates only its existence in that individual.

Some conditions, other than cancer, show a profound disturbance of the synergetic pattern. These suspicious patterns occur in seriously-ill individuals, with whose clinical improvement the pattern soon reverts to normal.

In leukemia the lakes are identical with those characteristic of the cancer pattern: cancer and leukemia are allied diseases. Pregnancy causes a similar showing, supporting the theory that cancer is a proliferation of new cells. In the majority of pregnancies, the proliferation of new cells is under control.

If there is a possibility of cancer complicating pregnancy, the test should then be repeated for several weeks after delivery. Should the test, however, continue to be positive after several weeks, then the presence of cancer should be seriously considered.

Tuberculosis and ulcerative colitis show patterns similar but not identical with cancer, especially when the disease is active. These configurations and those of cancer may be readily differentiated—the network is less chaotic than the cancer pattern, the lakes smaller, and more loose aggregations of red blood cells are scattered throughout the lacunar spaces. When this condition begins to improve, the pattern progressively reverts to normal.

This test can also be used in evaluating the course of the disease. If a cancerous process is completely excised, the pattern should become normal in six weeks. If the pattern does not revert to normal, one should assume that all of the cancer tissue was not removed.

Although no disturbance is found in the patterns of "oldsters," if in perfect health, frequently an aberration of the normal pattern is found, although one is reasonably sure no cancer is present. In many such cases the patient has an advanced type of a degenerative disease. If he responds to treatment, the pattern will revert to normal.

Slight change in pattern may occur in serious systemic infections.

A positive pattern is an indication for painstaking clinical, x-ray and hospital laboratory investigations. If this pattern is persistently indeterminate or positive, it should be repeated periodically.

Write the authors a postal card, addressed to 19 East 88th Street, New York City, requesting a reprint. You need to see the illustrations.

#### DEMANGE AHEAD OF HERRICK BY THIRTY YEARS

ONE of a series of articles by Zeman,<sup>1</sup> appearing currently, contains a remarkable account of the discovery and publication 62 years ago of the in-

timate relation between arteriosclerosis and coronary artery disease.

Not only was the publication of these discoveries ignored, but no reference to Demange's original observations were to be found in any of the histories of medicine in general or cardiology in particular consulted by Zeman.

In 1886 Emile Demange, of Nancy, France, published a small volume of clinical and pathological studies on old age, based on his experience at the Hospice St. Julien where he had observed 500 necropsies.

Demange devoted particular attention to arteriosclerosis and believed that atheroma was due to obliterating endarteritis of the vasa vasorum. He stated that this endoperiarteritis was due to stress and strain and was the principal cause of the lesions of old age. His views on the relation of the coronary vessels to heart disease in the aged are likewise amazingly modern and are based on the findings on dissection of the finer branches of the coronaries. Employing his own special technique, he found atheromatous changes in the coronaries of 22 out of 23 old persons who were not gouty, alcoholic, rheumatic or poisoned by lead; who died of pneumonia, erysipelas, diarrhea, brain hemorrhage or softening, or senile cachexia.

Quoting Demange verbatim:

"Up to now the close relations which unite the arteritic lesions of the coronaries to senility have not been sufficiently placed in relief; one has especially sought to explain certain maladies of the heart by lesions of these vessels; thus one has shown that fatty degeneration of the heart is related to atheroma of the coronaries; one knows infarction of the ventricular wall, recognizing as cause an obliteration of these vessels, and leading to degeneration and sometimes rupture of the heart; finally certain varieties of angina pectoris seem to be due to atheromatous alterations of the vessels."

1. F. D. Zeman, New York City, in *Jl. Mt. Sinai Hosp.*, Jan.-Feb.

#### ATYPICAL ACUTE MYOCARDIAL INFARCTION

ATYPICAL acute myocardial infarction, as of most diseases typically manifested, presents no difficulty. Recognition of atypical cases is difficult, but essential to early adequate treatment and to prevent needless operations.

Bay<sup>1</sup> elaborates this theme.

When it occurs without any chest pain the b. p. frequently drops more than in typical attacks, sweating occurs, the extremities quickly become cold. The ecg. is more likely to change early in the course of this type than in the classical variety.

1. E. B. Bay, Chicago, in *Jl. Mo. Med. Assn.*, Feb.

Leukocytosis is frequently quite high by the second day, as is the fever. The sedimentation rate is elevated.

Mild pain may be merely a sense of fullness in the chest without any radiation. A few patients will describe pain limited to the neck, severe or merely a sense of fullness, a choking sensation—all above the clavicles. A few patients describe pain limited to the arms and even to the elbows. In others the pain may begin as a sensation in the epigastrium which travels upward. In those in whom it remains below the diaphragm it can be confused with ruptured peptic ulcer or gallbladder disease of acute pancreatitis. Not a few needless operations have been performed on patients with this type of coronary pain. In all these cases in which the localization of the pain is unusual, the routine physical findings and laboratory tests provide the diagnosis.

Two patients with verified myocardial infarction had pain referred to the left leg as well as the left arm. Not infrequently it radiates to the back. If it is low in the chest, this can cause confusion with pancreatitis and gallbladder disease. If it is high between the shoulder blades, it needs to be distinguished from a dissecting aneurysm of the aorta. This distinction is important because one would not want to use anticoagulant therapy. A dissecting aneurysm may encroach on the coronary orifices in a way that leads to ecg. manifestations of myocardial infarction.

Another variation from the typical clinical picture is multiple episodes of pain of short duration comparable to angina pectoris except that the pain occurs in the absence of exertion or excitement—nearly always a part of a fresh myocardial infarction or an ominous warning that one is imminent. The diagnosis may be obscured early by the b. p. rising to unusual heights during the paroxysms of pain; the drop in b. p. may not occur for some hours. Because of the close association of adrenal tumors with myocardial infarction, such patients should be hospitalized quickly and given anticoagulant therapy even though no coronary occlusion has occurred. It is hoped thereby to prevent or minimize the myocardial infarction.

First anginal pain of short duration occurring in a patient who has arteriosclerotic changes, high b. p., or both, not infrequently is followed within 10 days by a protracted attack of pain representing a true infarction.

In spite of the use of anticoagulants, some of the complications of acute myocardial infarction continue to appear. However, these drugs modify the mortality and have cut the number of complications rather dramatically. It is important, therefore, for the physician to have his "index of suspicion" for these atypical forms of coronary occlusion at a high level.

## DOCTOR DAVIS, OF STATESVILLE, ENLARGES HIS HOSPITAL

Soon after completion of a distinguished service in World War I, Dr. J. W. Davis opened a hospital in Statesville for the better medical and surgical care of the people of that city and its county of Iredell, and of contiguous counties, all the way to the Tennessee line. After a dozen years it became urgently necessary that the patient capacity be doubled. After another dozen years, the still increasing demands of more and more patients, have been met by provision of a 50-bed annex, bringing the total hospital capacity to 150.

The addition, which will be devoted principally to the care of obstetrical patients, is fireproof like the rest of the hospital, and fully air conditioned. On the first floor are the waiting rooms and offices of the doctors, and utility rooms and rest rooms for men and women. On this floor also are some rooms for patients.

The second floor is mostly rooms for patients, both single and double, and the nursery, which is air conditioned with the most delicate and sensitive controls of temperature and humidity. The nursery is sound-proof and has a large observation window opening out on the hallway so that babies can be "visited" without being brought into contact with persons from the outside.

Adjoining the nursery is a special formula room, where the feedings are made up and an autoclave for their sterilization. Adjoining also is an elaborately outfitted room for bathing babies.

On the third floor are the delivery and labor rooms which are equipped with every modern convenience. A separate air conditioning unit takes care of the delivery room and the labor rooms. All of the electrical equipment in this part is explosion-proof, so that in the painless delivery of patients any anesthetic may be used with maximum safety.

In the planning, construction and equipment of this building, every possible safety device and everything that could add to the comfort and convenience of the mothers and children has been included.

The facilities of this new addition, we are assured, will be available at a modest cost within the reach of the patient of modest means.

In a medical meeting held while the last war was on, another surgeon who has built and conducted for fifty years a private hospital in this section, called on Dr. Davis to express the views of "the surgeon having the largest individual surgical practice in North Carolina."

Certainly, great ability and great energy were required for such accomplishment, without the aid of the publicity and free beds at the disposal of surgeons holding positions on the staffs of large teaching hospitals, and on the faculties of medical schools.



Dr. Davis and his associates are deserving of unmeasured praise for providing *personnel and material* of the very first order for the carrying out of medical, surgical and obstetrical care.

## BETTER TRAINING IN EARLY CHILDHOOD

CERTAIN primitive societies, according to Curle,<sup>1</sup> show a correlation between five variables; an insistence on personal cleanliness; early and forced weaning; deprivation of maternal care; a pattern of adult behaviour in which conflict and aggression are more dominant than friendly co-operation; and personality features which we would consider as psycho-pathological.

Nevertheless, the primitive is so integrated with his society that it may even make use of behaviour which, with us, might be dangerous to family and group cohesion. Intense aggression, for example, if it be canalized and directed outwards, can actually cement the unity of a tribe.

This contributor to a program of the Royal Society of Medicine (Lond.) goes on very interestingly:

There are two main psychological media which knit the primitive into the fabric of his culture. The first of these is social consistency, i.e., a continuity of behaviour patterns carried through from childhood into adult life. The second is the emotionally cogent initiation ceremony, by means of which, in societies in which behaviour patterns traditionally alter with advancing years, the child is helped over the transition periods of growth. In the more consistent societies this ceremony has little more importance than a birthday party in our own.

The subject of this study was a group of eight isolated, agricultural villages. The child there is made to feel a member of the household very early, and is always drawn to the centre of every family gathering. Everyone in the village is concerned for him and lavishes much care and attention on him. He enjoys a sort of communal care, and finds himself welcome in any house which he may care to enter. His clothes are clean and well cared for, and in spite of his riotous good spirits and his friendly and confident manner, he never gives the impression of having been spoiled. On the other hand, the mothers are a constant worry to the district nurse because they will not keep to schedule in feeding, and because they refuse to give any definite habit training. They think it wrong to impose standards on their children which they will eventually discover for themselves, in their own good time.

1. Adam Curle, in *Proc. Royal Soc. of Med.* (Lond.), Nov.

A CASE OF MULTIPLE INTUSSUSCEPTION is reported in which there were nine distinct intussusceptions involving the ileum and jejunum.—*Jl. Iowa Med. Soc.*, Feb.

## ACUTE PANCREATITIS

(F. W. Quattlebaum, St. Paul, in *Jl. Lancet*, Dec.)

There are two forms of acute pancreatitis—(1) acute interstitial or acute edema of the pancreas; (2) acute hemorrhagic or acute pancreatic necrosis.

Biliary disease and dietary and alcoholic debauches are factors commonly related to onset of acute pancreatitis. The release of active trypsin into the acinar tissue is probably the factor of prime importance in the pathogenesis of acute pancreatitis.

The serum amylase is the greatest single aid in the diagnosis of acute pancreatitis.

The mortality rate should be nil in the cases of acute edema of the pancreas that are *not* operated upon.

Death in acute hemorrhagic pancreatitis is probably caused by some systemic toxemia.

Treatment is conservative whenever the individual case can be so treated.

The mortality rate in acute pancreatic necrosis is still too high. It is near 50% in the cases operated on early and around 30% following delayed operation.

## COMPARATIVE TOXICITY AND SIDE EFFECTS OF THE ANTIHISTAMINIC DRUGS

(E. Schwartz, Brooklyn, in *Annals of Allergy*, Nov.-Dec.)

The comparative toxicities and the incidence of side effects of Benadryl, Pyribenzamine, Neo-Antergan, Antistine, Histadyl and Neohetramine were studied at dosages adjusted to give equal therapeutic results in 781 allergic patients.

Side effects occurred with all six drugs. Drowsiness, the commonest side effect, was most frequent and pronounced with Benadryl. In contrast it occurred rarely and was least pronounced with Neohetramine—Benadryl, 61.3 per cent in 217 cases; Neohetramine, 7.2 per cent in 111 cases.

In this study of the comparative toxicity and side effects of the antihistaminic drugs, Neohetramine was found to be the least toxic in therapeutically effective doses.

## DERMATITIS DUE TO WEARING APPAREL

(G. T. Taylor, St. Petersburg, in *Jl. Fla. Med. Assn.*, Mar.)

Almost always the allergic response is to substances or materials which are commonly harmless. This sensitivity does not usually become manifest as a skin rash until several days after the offending article has been worn. Occasionally weeks or even months elapse before dermatitis develops. This variable interval may be regarded as the incubation period during which skin sensitivity develops following the initial exposure.

The skin eruptions cover a wide range, from mild erythemas to severe vesicular or weeping types. Itching is almost constantly present. The dermatitis always begins on the part of the skin in contact with the irritant, and here it is usually most severe.

The classes of materials involved in dermatitis caused by wearing apparel include furs, natural and synthetic fabrics, rubber, leather, metals and plastics. These, together with the dyes and other chemicals used in their preparation, provide a large total of substances which are capable of sensitizing the skin.

## IN GALEN'S TIME EVEN AS IN OURS

(From *Journal of the National Medical Association* [Negro], March, 1950)

Negroes are distinguished by 10 principal characteristics: frizzled hair, thinness of beard, wide nostrils, thick lips, powerful teeth, odor of the skin, black hue, spread-out toes, length of the sex organ and finally a propensity for noisy hilarity.—*Galen*.

Inflation makes us do without a lot of necessities so we can buy the luxuries we can't live without.

## NEWS

### UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE CHARLOTTESVILLE

The University of Virginia has received a grant of \$25,000 from the John and Mary R. Markle Foundation for a five-year period in support of a Scholarship in Medical Sciences for Dr. Charles G. Craddock, Jr. Dr. Craddock received the M.D. degree from the University in 1944 and completes his residency at the University Hospital in June.

Dr. John Hamilton Allan, Assistant Professor of Orthopedic Surgery at the University of Pennsylvania Graduate School of Medicine, has been appointed Professor of Orthopedics and Chairman of the School of Orthopedics at the University of Virginia, effective July 1st.

Dr. Joseph F. A. McManus, Associate Professor of Pathology at the Medical College of the University of Alabama, has been appointed Associate Professor of Pathology at the University of Virginia, effective July 1st.

Dr. Monroe D. Eaton, on leave of absence from the Harvard Medical School, is Visiting Professor of Bacteriology for the second semester.

The Wisconsin Surgical Club visited the University of Virginia Hospital on March 8th and 9th.

Recent visiting lecturers:

Dr. Willard O. Thompson, University of Illinois—Subject: "Recent Developments in Our Knowledge of the Adrenals."

Dr. Theodore L. Squier, Marquette University—Subject: "Quantitative and Differential Changes in Circulating White Cells after Varied Stimuli."

Dr. Richard H. Sweet, Harvard University—Subject: "Recent Advances in Thoracic Surgery."

Dr. Henry T. Randall, Columbia University—Subject: "Metabolic Studies on Surgical Patients."

Dr. Frank Meleny, Columbia University—Subject: "Recent Advances in Antibiotic Therapy."

### DUKE UNIVERSITY MEDICAL SCHOOL

Dr. Samuel Preston Martin, 33-year-old associate in medicine, has been awarded a \$25,000 grant by the Markle Foundation. Dr. Martin is one of 20 young scientists in the United States chosen by the Foundation this year. The award winners will make use of the grants over a five-year period.

Duke is one of three universities to receive Markle awards for each of the three years they have been established. The other two institutions are Yale University and the University of Pennsylvania.

Funds from the grant will enable Dr. Martin to continue research on resistance to infectious diseases, especially tuberculosis and diseases caused by invasion of the blood by bacteria. He will also study the effects of the newer antibiotic drugs.

Dr. Donald S. Martin, a member of the Duke University Medical School and Duke Hospital staffs for 18 years, has resigned to become Dean and Professor of Microbiology at the newly-established University of Puerto Rico School of Medicine.

Dr. Martin is professor of preventive medicine and public health, associate professor of bacteriology and epidemiologist at Duke Hospital. His resignation becomes effective March 31st.

The new medical school in Puerto Rico will open its doors for the first time next Fall. A first-year class of 50 will be admitted. Dr. Martin will assume his new duties about April 1st. He is a native of Johnstown, Pa., and

received the A.B. degree from Johns Hopkins, M.D. from the University of Rochester, and M.P.H. from Columbia University. In addition, he has completed the residence requirements for the Doctor of Public Health degree at Columbia.

### MEDICAL COLLEGE OF VIRGINIA

Eight promotions from the adjunct to the major faculty have been approved for 1950-51:

Mr. W. L. Robinson from instructor in legal medicine to lecturer in legal medicine.

Dr. Irving B. Gold from associate in to assistant professor of anesthesiology.

Dr. Henry G. Kupfer from instructor in to assistant professor of clinical pathology.

Dr. Spottswood Robins from associate in to assistant professor of gynecology.

Dr. Edwin H. Rucker from associate in to assistant professor of gynecology.

Dr. Paul D. Camp from associate in medicine to assistant professor of clinical medicine.

Miss Sara Jane Houtz from instructor in to assistant professor of physical therapy.

Miss Thelma Pedersen from instructor in to assistant professor of physical therapy.

Four new appointments on the major faculty as lecturers in legal medicine are: Doctors Russell Fisher and Robert K. Waller and Messrs. Elwood Ford and Kenneth Redden.

Drs. Helen B. Taussig and H. William Scott, Jr., of the faculty of Johns Hopkins University, joined members of the faculty of the Medical College of Virginia in the presentation of a symposium on congenital heart disease at the College February 17th. Members of the MCV faculty who took part are: Drs. Erling S. Hegre, Reno Porter, Howard McCue, William B. Porter, Thomas M. Scotti and Nathan Bloom.

More than 200 physicians from West Virginia, North Carolina and Virginia attended the symposium. It was sponsored by the Department of Continuation Education of the College.

Dr. Taussig was selected as the first lecturer in an annual series to be sponsored by the Alpha Epsilon Iota Sorority of the College. She gave the lecture on Friday, February 17th, taking as her subject "Cyanotic Malformations Amenable to Surgery—Diagnosis and Differential Diagnosis."

### STANLEY PHYSICIAN 1949 COUNTRY DOCTOR

Dr. B. G. Weathers, of Stanley, has been named Gaston County's "Country Doctor of the Year 1949," by the Gaston County Medical Society, which will enter his name in the State contest sponsored by the North Carolina Medical Society.

Dr. Weathers, 54, has practiced his profession in Stanley for 20 years, going there in 1929 after graduation from the Medical College of Virginia at Richmond, and an internship at Cooke County General Hospital, Chicago.

Dr. Weathers went to Stanley, he said, because "I had made up my mind to be a country doctor when I started out, and I've never changed my mind about it."

He is a native of Cleveland County, one of ten children reared on a farm five miles north of Shelby. He did farm chores and went to country schools during his boyhood, then dropped out of school for a full-time fling at farming until he was 18.

He had completed two years at Lawndale High School when World War I broke out. In 1917, he enlisted and during the next two years saw service in the States, and overseas with the 30th Division. He picked up his diploma

at Lawndale High School in 1921.

Dr. Weathers estimates that he has delivered 3,600 babies. "If every one of my babies had settled in Stanley," he said, "our town would be second in size to Gastonia in this county."

In the olden days, when the county roads were bad, his car often had to be pulled out of mudholes by mule and tractor, and pulling him out constituted part of the fee for patients.

His closest escape from danger came one night when he missed the South Fork River bridge and his car plunged into the water. The front wheels were covered. A tractor soon remedied things, however, and Dr. Weathers escaped without injury.

#### DR. BARRETT REAPPOINTED TO STATE POST

Governor Battle has announced the reappointment of Dr. Joseph E. Barrett as State Commissioner of Mental Hygiene and Hospitals for a term to run concurrently with that of the Governor.

Dr. J. M. Emmett, of Clifton Forge, was named to the Board of Visitors of the University of Virginia to succeed the late Dr. Hugh H. Trout, of Roanoke, for a four-year term which ends February 28th, 1954. Five members of the board were reappointed:

Mrs. Ben Wailes, of Sweet Briar; Richard A. Carrington, Jr., of Lynchburg; Mrs. Herbert McKeldin Smith, of Staunton; Thomas Benjamin Gay, of Richmond, and John Segar Gravatt, of Blacksburg, all for four-year terms ending February 28th, 1954.

The appointments all were confirmed by the General Assembly.

DR. J. O. McCLELLAND, beloved Maxton, N. C., physician, who has been retired for several years because of ill health, will be honored by his friends, who plan to furnish a room in the new Scotland County Memorial Hospital Nurses' Home in Laurinburg. A plaque will be hung in the room bearing his name.

Dr. McClelland, who was graduated from the Medical College of Virginia in 1908, has conducted a large practice in Maxton and in the adjacent parts of Robeson and Scotland Counties for four decades.

E. J. DUNNING, M.D., announces the opening of offices for the practice of General Surgery including Proctology, 1111 East Morehead Street, Charlotte, N. C.

DR. M. ROBERT LINK announces the opening of offices for the practice of Otolaryngology and Peroral Endoscopy, 1530 Elizabeth Avenue, Charlotte, N. C.

DR. HOWARD P. STEIGER announces the association of DR. GEORGE L. BROWN in the practice of Dermatology, 211 Hawthorne Lane, Charlotte, N. C.

THE CARTERET COUNTY MEDICAL SOCIETY on March 13th held its regular monthly meeting at the Morehead City Hospital—a dinner meeting—the hospital acting as host.

C. L. Beam, director of the local Veterans' Bureau, presented to the Society the rules and regulations for the hospitalization of ex-service men and the relationship between the private practitioner and the VA. His talk was freely discussed and it seemed to be the general opinion that the VA regulations should be revised so as to give better and more prompt medical and hospital service to the ex-service man.

DR. C. S. Maxwell, Secretary of the Society, was nominated "Doctor of the Year" to represent the Carteret County Medical Society.

Dr. S. W. Thompson, President of the Second District Medical Society, made a progress report on the coming meeting of the Society to be held at Morehead City; the tentative date is set as May 24th.

It was announced that at the April meeting the speaker would be Dr. H. S. Willis, Superintendent North Carolina Sanatoria, whose topic will be the antibiotics and surgery in the treatment of pulmonary tuberculosis.

Dr. S. W. Hatcher, President, presided.

N. Thomas Ennett, M.D., Cor. Sec.

#### DIED

### Doctor George H. Bunch

Editorial in the *State*, Columbia

DR. GEORGE H. BUNCH, 70, distinguished surgeon, died suddenly at 7 P. M., February 6th, at the Columbia Hospital, where he had gone to attend a staff meeting.

Doctor Bunch, one of Columbia's most beloved citizens, was known not only as a surgeon of rare skill and excellent judgment, but as one whose services were available to all people, regardless of means, race or creed. Several physician friends, gathered at the home last evening, shocked at the news of his death, had this to say: "He was the greatest servant in surgery to the poor people of South Carolina."

Doctor Bunch was widely known for his writings on surgical subjects and medical history. But his interest in learning did not end with affairs medical. He read a great deal and was a particularly well-informed man on matters of general interest, past and present. Only recently he read before the Forum Club a scholarly paper on Marshal Ney.

Although Doctor Bunch reached the age of three-score-and-ten last year, no one could have told his age from his looks. Having played tennis all of his life, he continued to do so, being on the courts as recently as last Saturday.

Doctor Bunch had been Chief of Staff of the Baptist Hospital since 1923. Throughout these years he gave devoted service in this capacity. He was also at one time chief of staff of the Columbia Hospital, and at another time of the Providence Hospital. Thus he served as Chief of Staff for all three of Columbia's general hospitals. He served as consultant surgeon for the State Park Sanatorium and for the Southern Railway.

Fellow members of his profession had honored Doctor Bunch on numerous occasions. He was a former president of the Columbia Medical Society, a former president of the South Carolina Medical Association and of the Tri-State Medical Association of the Carolinas and Virginia, of which he was also, at one time, councilor. He was a member, also, of the Second District Medical Society, the Southern Surgical, the American College of Surgeons, the International College of Surgeons and the American Medical Association.

While Doctor Bunch's practice was confined largely to South Carolina, his reputation as a surgeon was widespread. Leaders nationally recognized his ability.

Doctor Bunch, who was a grandnephew of Senator B. R. Tillman, was born October 20th, 1879, at "Lanham Hill," Edgefield County. He was a son of John William Bunch and Alice Tillman Bunch. He moved to Columbia with his parents at the age of 11. He was graduated from Columbia High School and the University of South Carolina. He took his medical training at the University of Michigan, where he got his M.D. in 1903. After interning for two years in Michigan, he came to Columbia to enter private practice and to spend the remaining years of his life in this city.

Surviving are his wife and three children: Mrs. James Good (Claiborne Bunch), of Columbia; Mrs. Kirby Clements (Frances Elizabeth Bunch) of Montgomery, Ala., and



Dr. George H. Bunch, Jr., of Columbia. A daughter, Carolyn Bunch, died at the age of 19 while a student at the University. He is also survived by his mother, Mrs. John W. Bunch, of Columbia; two sisters, Mrs. H. H. Harris, of Charlotte, N. C., and Mrs. Alfred Owings, of Columbia; one brother, D. S. Bunch, of Lykesland. He also leaves the following grandchildren: Karen Ansel Good and Fredee Anne Good, of Columbia; Gus Clements, III, of George Bunch Clements and Carolyn Ansel Clements, of Montgomery, and George H. Bunch, III, and Robert Holt Bunch, of Columbia.

Dr. C. T. Bullock, prominent physician and surgeon of Mullins, S. C., died February 24th, after a brief illness. Dr. Bullock, a native of Fairmont, N. C., attended Campbell College at Buies Creek, N. C., and the University of South Carolina and was graduated from the Medical College of South Carolina, Charleston. He did graduate work in New York, was a Fellow in the American College of Surgeons.

Dr. Edmund Wainhouse Poulson Downing, 89, for more than half a century a practicing physician in Northampton County, Va., died at his home in Franktown February 22d.

Born at Belle Haven, Va., he attended local schools and the New Market Polytechnic Institute where he studied civil engineering. He was, in 1886, graduated from the College of Physicians and Surgeons in Baltimore.

Dr. Downing, who practiced his profession in this area for 61 years, retired because of failing health in 1949. He was a member of the "50 Year Club" of the Medical Society of Virginia in which organization he also held life membership.

Dr. William Maurice Fresh, 68, of Hickory, N. C., died in a local hospital March 5th, following several years of declining health and a critical illness of several weeks.

Until his retirement several years ago, Dr. Fresh had practiced his profession at Hickory since 1927. He was a graduate of the Medico Chirurgical College, Philadelphia, and practiced in Pittsburgh for six years. Moving to North Carolina, Dr. Fresh practiced in Asheville and Weaversville for 11 years, then moved to Toccoa, Ga., where he practiced three years before moving to Hickory.

Regular meeting of CATAWBA VALLEY MEDICAL SOCIETY Wednesday evening, January 25th, 1950, at 6:30 p. m., High School Cafeteria, Lincolnton, N. C.

Hereditary Diseases in Medical Practice by Dr. C. Nash Herndon, Winston-Salem, N. C.

Differential Diagnostic Facts of Laryngeal Conditions by Dr. L. Thomas Morton, Lincolnton, N. C.

Presentation of Cases.

—L. A. Crowell, Jr., M.D., Sec.-Treas.

#### SOME NEWER CONCEPTS IN THE LABORATORY DIAGNOSIS OF TUBERCULOSIS

(S. E. Miller, B.S., M.D., in *Clinical Symposia*, Ciba Pharmaceutical Products, Inc.

A properly collected fresh specimen is essential. Smear examination is inadequate for the laboratory diagnosis of tuberculosis. Large numbers of tubercle bacilli must be present to be readily detected by smear examination. Direct smears made from "choice particles" are as good or perhaps superior to concentrated sediment smears.

The standard Ziehl-Neelsen stain is still the staining method of choice.

A proper cultural technique is as sensitive a method of demonstrating tubercle bacilli as animal inoculation and much cheaper. Modified Lowenstein-Jensen's medium is

probably the most sensitive culture medium now available. A competent bacteriologist can, with a fair degree of reliability, distinguish colonies of pathogenic t. b. from non-pathogenic acid-fast colonies on this medium.

Inspissation is superior to autoclaving of all the complex egg culture media for t. b. cultivation. Fresh culture medium is essential because it loses sensitivity in two to four weeks.

For final typing of t. b. animal inoculations are necessary. The guinea pig remains the animal of choice for testing virulence of strains of the human t. b.

A routine tuberculin test of all guinea pigs with 5 mg. of O. T. three to four weeks after inoculation very frequently "speeds up" the animal inoculation test.

Rapid homogenization by a paint conditioning (shaking) machine is superior to longer, slower methods.

#### AND TO WEIGHT OF THE PARENTS

(R. S. Illingworth, in *British Med. J.*, Jan. 14th)

Mothers are occasioned a great deal of worry by being told that their child is under weight for its age. A considerable proportion of so-called under-weight children are found to be of average weight when due attention is paid to age, sex, and weight at birth.

A young woman took a job as a governess, then suddenly left it. Asked why she resigned, she said, "Had to. Backward child, forward father."

*Hoffman-La Roche, Inc.*, has just announced that its multi-vitamin specialties—Vi-Penta Drops and Perles, Supradin and Cal-C-Tose—now contain *synthetic* vitamin A palmitate. The use of synthetic vitamin A—an achievement of the Roche Research Laboratories—eliminates fishy odor and taste, and obviates the possibility of allergy to fish liver oils.

## EDGEWOOD

A Distinctive Southern Sanitarium Fully Equipped for Complete Diagnosis and Treatment of Nervous and Mental Disorders . . . in an Atmosphere of Congenial Friendliness and Quiet Charm.

Edgewood offers all approved therapeutic aids; complete bath departments; supervised individual physical rehabilitation programs. Living accommodations are private and comfortable. Recreational facilities excellent. Full time psychiatrists, adequate nurses and psychiatric aides assure individual care and treatment. More detailed information on request.

Psychiatrist-In-Chief

ORIN R. YOST, M.D.

## EDGEWOOD

ORANGEBURG

SOUTH CAROLINA

## BOOKS

**POSTGRADUATE GASTROENTEROLOGY**—As Presented in a Course Given Under the Sponsorship of the American College of Physicians in Philadelphia, December, MCMXLVIII: Edited by HENRY L. BOCKUS, M.D., Professor of Gastroenterology, University of Pennsylvania Graduate School of Medicine. 670 pages with 258 figures. W. B. Saunders Company, W. Washington Sq., Philadelphia and London. 1950. \$10.00.

This book is made up of the contributions of some 40 of the most eminent authorities on this subject. It makes available a permanent record of the features of an elaborate course on the medicine and surgery of gastroenterology. It might have been taken for granted that such important subjects as gastric neoplasm, peptic ulcer, diseases of the pancreas, diseases of the liver and chronic ulcerative colitis would be dealt with fully. A fact which attracts the special attention of this reviewer is that pyrosis, gastric secretion, secondary gastric disorders and application of neuropsychiatry to gastrointestinal problems are all given equally elaborate consideration. Every internist and every general practitioner will find the information offered by this book of great value every day of a busy practice.

**MEDICINE OF THE YEAR (1950)**, under the editorial direction of JOHN B. YOUNG, M.D., Dean of School of Medicine, Vanderbilt University.

This volume undertakes to present the important advances in medicine during 1949. The trend of events is charted. With further experience some agents which were first regarded as promising have failed to come up to expectations. The evidence in each case is presented in an informative and critical manner to make for greatest usefulness in daily practice.

**UROLOGICAL SURGERY**, by AUSTIN INGRAM DODSON, M.D., F.A.C.S., Richmond, Va., Professor of Urology, Medical College of Virginia. Second edition with 645 illustrations. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3. 1950. \$13.50.

The coverage of this important subject has been supplied by the author and a dozen collaborators, all of them clinicians of long and broad experience in practice in clinics and hospitals having the most elaborate equipment.

The result, as necessarily follows, is all that could be desired—as to text, illustrations and indexing.

**MEDICAL MANAGEMENT OF GASTROINTESTINAL DISORDERS**, by GARNETT CHENEY, M.D., Clinical Professor of Medicine, Stanford University Medical School. *The Year Book Publishers, Inc.*, 200 E. Illinois St., Chicago 11, Ill. 1950. \$6.75.

Since symptoms referable to the digestive organs

bring a great number of persons to their physicians, and the vast majority of these symptoms and the pathological states which cause them are amenable to medical management, a book which tells how to carry out this management is among those most in demand. The volume under review may be depended upon to meet these needs.

**CURRENT THERAPY 1950**—Latest Approved Methods of Treatment for the Practicing Physician—Editor: HOWARD F. CONN, M.D. Consulting Editors: M. EDWARD DAVIS, VINCENT J. DERBES, GARFIELD G. DUNCAN, HUGH J. JEWETT, WILLIAM J. KERR, PERRIN H. LONG, H. HOUSTON MERRITT, PAUL A. O'LEARY, WALTER L. PALMER, HOBART A. REIMANN, CYRUS C. STURGIS, ROBERT H. WILLIAMS. 735 pages. W. B. Saunders Company, W. Washington Sq., Philadelphia, and London. 1950. \$10.00.

This is the second of a contemplated series of volumes being published to bring to the practicing physician information on the best methods for treatment of disease. More than 200 physicians and surgeons in all the various divisions of medicine contribute the subject matter. Among these are dermatologists, neurologists, internists, cardiologists, obstetricians, allergists, general surgeons, pediatricians, psychiatrists, gynecologists, urologists, and all the rest. These contributors are of such standing as to assure a guide which may be relied on as the last word to date.

**CARDIOVASCULAR DISEASE**, Fundamentals, Differential Diagnosis, Prognosis and Treatment, by LOUIS H. SIGLER, M.D., F.A.C.P., Attending Cardiologist and Chief of Cardiac Clinic, Coney Island Hospital. *Grune & Stratton*, 381 Fourth Ave., New York 16, N. Y. 1949. \$10.00.

The subject of cardiovascular disease is presented after an unusually practical fashion. First comes a discussion of the general incidence, then the etiology, and the essential anatomical features. Then chapters on the physiological features of the circulation, heart size and measurements, heart rate and rhythm, sounds, murmurs, and arterial and venous pulse. The chapter on subjective manifestations of heart disease might have been longer. Heart failure, angina, Adams-Stokes syndrome and hyper and hypotension are amply discussed, as are coronary occlusion and myocardial infarction, rheumatic fever and heart disease, bacterial endocarditis, valvular disease, disease of the myocardium and pericardium, congenital heart disease; and the bearing of pregnancy and the application of surgery to cardiovascular disease.

The approach and the dealing are entirely practical, so the result is a reliable office, home and hospital practice guide.

It's not hard to live on a small income—so long as you don't spend too much trying to keep it a secret.

It doesn't pay to judge by size. Sometimes even a woman's thumb has a man under it.

CONSTITUTION AND BY-LAWS OF THE  
TRI-STATE MEDICAL ASSOCIATION  
OF THE CAROLINAS AND VIRGINIA  
As Revised By Annual Meeting, 1948

CONSTITUTION

ARTICLE I

*Title of the Association*

The name and title of this Association shall be "The Tri-State Medical Association of the Carolinas and Virginia."

ARTICLE II

*Objects of the Association*

The objects of this Association shall be the advancement of medical science, the elevation of the profession, and the promotion of all means for the relief of suffering humanity.

ARTICLE III

Section 1. This Association shall consist of active and honorary members.

Section 2. Any member of the 1) Medical Society of the State of North Carolina, 2) South Carolina Medical Association, or 3) Medical Society of Virginia, in good and regular standing shall be eligible for membership.

Application for membership must be presented in writing, giving name in full, address, and college of graduation, with year, and be endorsed by two or more members of this Association.

Application for membership shall be referred to the Executive Council and election shall be by ballot.

Section 3. Honorary members: A physician proposed by two members of the Association from each State or one member of the Executive Council from each State, to the Executive Council, and receiving a two-thirds vote of the members present.

In compliance with a suggestion of President C. C. Orr at the 1936 meeting, honorary membership shall be granted to those members of the Association who have been members and paid their dues regularly for twenty-five years.

ARTICLE IV

*Time and Place of Meeting*

This Association shall hold an annual meeting, in one of the respective States alternately, at such time and place as the Association or the Executive Council may determine. It shall continue in session two days, unless otherwise ordered by the Association.

ARTICLE V

*Officers*

Section 1. The Officers of this Association shall consist of a President, a President-elect to be chosen from the State in which the next year's meeting will be held, three Vice-Presidents—one from each State—a Secretary and a Treasurer (or a Secre-

tary-Treasurer) and nine Executive Councillors—three from each State.

Section 2. The Executive Council shall consist of the above elected officers of Section 1 and all living Past Presidents.

Section 3. The Executive Council shall elect at its annual meeting a Nominating Committee, consisting of five members—three of whom are to come from the State from which the President-elect is to be chosen. The duties of the Nominating Committee shall be to nominate all officers except the Executive Councillors. This Committee is to report in writing at the Association's next business meeting in open session, but this shall not preclude the nomination of any officer by any member of the Association and election shall be by ballot. The officers shall enter upon their duties immediately before the adjournment of the meeting at which time they are elected and shall hold office for one year. Any vacancy occurring during the recess shall be filled by the Executive Council.

ARTICLE VI

*Amendments*

This Revision of the Constitution and By-Laws shall take effect immediately from the time of its adoption, and shall not be amended, except by written resolution, which shall lie over one year, and receive a vote of two-thirds of the members present.

BY-LAWS

*Duties of the President*

1. The President shall preside at the meeting, and perform the usual duties of his office; he shall make an annual address, and shall not be eligible for election for a second term. He shall be Ex-officio Chairman of the Executive Council and Co-Chairman of all Committees appointed by him.

2. The President shall appoint a Program Committee consisting of one member from each of the three States. The Chairman of this Committee must be from the vicinity of the next meeting. The President and President-elect and Secretary shall be ex-officio members of this Committee. The responsibility for proper preparation of the program rests entirely upon this Committee. Each essayist shall present his subject and a brief summation of his presentation to this committee and the committee is empowered to accept or reject any essay except in the case of invited speakers.

*Duties of the Vice-Presidents*

1. One Vice-President shall perform the duties of the President during his absence, or when so requested by him. A Vice-President shall not be eligible for re-election for any two terms in succession.

2. The Vice-Presidents shall constitute the Membership Committee whose duties it will be to create interest in the Association and solicit desirable



members.

#### *Secretary and Treasurer*

The office of Secretary and that of Treasurer may be held individually or combined in the office of Secretary-Treasurer.

#### *Duties of the Secretary*

The Secretary shall attend and keep a record of all meetings of the Association and Executive Council, he being ex-officio a member of the Executive Council and entitled to vote. He shall conduct the correspondence of the Association, and shall be the custodian of all papers, seals, books and records of the Association. He shall keep a register of the members, with the dates of their admission and places of their residence and shall furnish such a copy to any other officer or committee upon request and shall perform all such other duties as pertain to his office. He shall receive such compensation for his services as the Association or the Executive Council may agree upon. In conjunction with the scientific program committee he shall see that a copy of the preliminary program is mailed to each member not less than twenty-one days prior to the meeting.

#### *Duties of the Treasurer*

The Treasurer shall collect all moneys due from the members and other sources and place it in a depository designated by the Executive Council. He shall keep the accounts of the Association and shall disburse the funds as directed by the Association, preserving vouchers for the same, and shall render an account annually at each meeting when an Auditing Committee shall be appointed to examine his accounts and vouchers. He shall receive such compensation as the Association or the Executive Council may agree upon. He shall be an ex-officio member of the Executive Council and entitled to vote.

#### *Duties of the Executive Council*

The Executive Council shall consist of nine members—three from each State. The Executive Council shall elect annually one from each State, to serve for a period of three years. The President, President-Elect, Secretary, Treasurer and the surviving Past Presidents shall be ex-officio members of the Executive Council.

The duties of the Executive Council shall be to investigate applications for membership, and report to the Association those that are considered worthy. It shall have the management of the affairs of the Association during the interim as well as during the meeting. All motions and resolutions before the Association shall be referred to the Executive Council without debate, and the Executive Council shall report to the Association as soon as possible.

It shall carry out the provisions of the Constitution and take cognizance of all questions of an ethical, judicial, or personal nature, and upon these

its decisions shall be final; except that an appeal may be taken from such decision of the Executive Council and upheld by a two-thirds vote of the Association.

No member of the Executive Council, holding two offices, shall have the privilege of voting more than one office.

#### *Order of Business in Convened Session of the Association*

1. Calling meeting to order
2. Divine Invocation
3. Announcements
4. Scientific Program
5. Past Presidents' Luncheon
6. Resuming Scientific Program
7. Banquet and Presidential Address  
(Details of arrangement to be left to the Local Committee)

#### *Second Morning*

1. Business Session
  - a) Report of Secretary
  - b) Report of Treasurer
  - c) Report of Executive Council Meeting
  - d) Committee Reports
2. Resume Scientific Program
3. Memorial Service to be held about Noon
4. Report of Nominating Committee, followed by Election of Officers
5. Luncheon Recess
6. Resume Scientific Program
7. Adjournment.

#### *How Committees Are Appointed*

The President shall appoint the following Committees in addition to any other committees which he thinks desirable for the proper carrying out of the coming meeting; Arrangement, Auditing and Necrological.

#### *Finance*

Dues are five dollars per year, payable in advance; however, the amount of the annual dues may be changed by a majority vote of the Executive Council.

Any member neglecting to pay his annual dues for one year forfeits his membership, upon a vote of the Executive Council.

The Recommendation of the 1929 Executive Council is accepted and included as follows:

It was moved that at the end of one year the journal cease to go to a member in arrears, but that he be carried on the rolls for two years as a member, after which time his account will stand on the books of the Association: \$5 dues for the first year, \$3 per year dues for the second and third years—total \$11. No membership shall be renewed until all arrears are paid in full.

#### *Papers*

The titles of all papers to be read at any meeting shall be furnished to the Secretary not later

than four weeks before the annual meeting. No paper shall be read before the Association that has previously been read or published. Not more than twenty minutes shall be occupied in reading any paper except by a vote of the Association. In the discussion of the papers, resolutions or questions, no member shall speak longer than five minutes, or more than twice, except on special permission by a vote of the Association.

This limit of twenty minutes per paper does not apply to the Presidential Address, or the papers of the Invited Guests.

Every paper read before the Association immediately becomes the property of the Association. A copy of the paper must be left by the reader with the Secretary of the Association. Every paper presented at the annual meeting of the Association will be published in the Association's official organ, unless its publication should be thought by the President and the Secretary to be highly undesirable. No paper presented at the annual meetings of the Association shall be published first in any journal other than the official organ of the Association without the written approval of the President and the Secretary.

#### Parliamentary Rules

Robert's Rules of Order shall be accepted as a parliamentary guide in the deliberations of this Association.

#### WRITE AUTHOR A CARD REQUESTING A REPRINT

"Angina Pectoris Simulated by Pancreatitis," in *American Journal of Digestive Diseases* (Jan.) Author—

DR. M. W. METTENLEITER, 1000 Park Ave., New York City.

"Analysis of 10,000 Appendectomies," in *Minnesota Medicine* (Jan.) Author—

DR. ELMER C. PAULSON, 4336 Elliott Ave., Minneapolis.

"Present Aspects of Melanomas," in *Jour. Med. Soc. of New Jersey* (Mch.) Author—

DR. SAMUEL GOLDBERG, West Orange, N. J.

"Treatment of Arthritis with Anathion," in *Jour. Med. Soc. of N. J.* (Mch.) Author—

DR. W. F. J. WITTENBORN, 1635 Brunswick Ave., Trenton, N. J.

"Diagnostic Errors in Diabetes," in *Il. Med. Soc. N. J.* (Mch.) Author—

DR. BENJ. SASLOW, 120 Shanley Ave., Newark, N. J.

"An Evaluation of the Modern Methods of Treatment of Hypertension," in *Med. Annals Dist. Col.* (Mch.) Author—

DR. W. B. WALSH, Georgetown Univ. School of Medicine, Washington, D. C.

"Transverse Abdominal Incisions," in *Texas State Journal of Medicine* (March.) Author—

DR. E. E. MIDDLETON, Abilene, Texas.

#### ANESTHETIC DISASTERS

(R. A. Gordon, Toronto, in *Modern Med.*, Mar.)

Most deaths during anesthesia are due (1) to asphyxia by obstruction of the respiratory passages, (2) depression of respiration to the point where the patient is no longer able to provide himself with enough O for survival, or (3) reduction of the O of the inhaled atmosphere below that necessary for life.

Prolonged or severe anoxia produces degenerative changes in the cerebral cortex which kill some hours or days after operation, or cause mental changes in the survivor. These sequelae may be avoided by maintenance of an adequate airway.

Under conditions of anesthesia, most patients require at least 20 per cent of O in the inspired atmospheric air. A lesser concentration, if imposed for longer than a very few minutes, may result in death or crippling mental changes. Some patients require more O, particularly those who are anemic or in a state of shock or who have an increased metabolic rate because of fever or overactivity of the thyroid.

Grave depression of the respiratory function is a matter of overdosage of the anesthetic. The act of breathing does not of itself insure adequate oxygenation.

Many disasters have occurred because of a mistaken idea that movement of the chest is indicative of breathing. The only proof that breathing is taking place is demonstration of the movement of air or anesthetic mixture into and out of the respiratory tract.

The chances of aspiration of vomitus may be reduced by care in the induction and by giving no general anesthetic soon after food is taken. When this is not possible be sure of good suction equipment and induce with the patient on the side, head-down. A tight-fitting endotracheal tube prevents aspiration of vomitus.

Most fatalities from aspirated blood are during tonsillectomies and adenoidectomies and may be absolutely prevented by the use of an endotracheal tube and a small gauze pack in the lower pharynx, with proper positioning postoperative, so that blood drains from the mouth. When the anesthetist is unable to perform endotracheal intubation, great care must be taken to suck all blood from the pharynx promptly.

Asphyxia due to laryngeal spasm may be avoided by forcing O into the respiratory tract as the glottis begins to relax; this always occurs before death from asphyxia.

Laryngeal spasm may usually be prevented by stimulation of the larynx by secretions until full surgical anesthesia is obtained, and by establishing and maintaining such anesthesia.

Control of convulsion during anesthesia by an IV barbiturate and artificial ventilation with O should prevent a major disaster.

Death during spinal anesthesia is usually caused by anoxia from deficient circulation with diminished respiration because of paralysis of intercostal muscles—avoided by proper control of b. p. through vasopressor drugs and parenteral fluid and O.

Among the disasters of spinal anesthesia, too little mention is made of meningitis from infection and of permanent neurologic damage caused by mechanical and chemical factors. Scrupulous attention to the details of asepsis in the technic of inducing spinal anesthesia is essential.

Most instances of chemical damage to the central nervous system following spinal anesthesia may be traced to contamination of the drug with alcohol or other solution used to sterilize the ampule. Cracked and defective ampules cannot be entirely eliminated, but contamination is readily detected before the injection is made if ampules are sterilized in highly colored solutions.

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JAMES M. NORTINGTON, M.D., Editor

VOL. CXII

APRIL, 1950

No. 4

## The Toxemias of Pregnancy

W. C. VERDERY, M.D., Fayetteville, North Carolina

**BY** WAY OF PREFACE, I should attempt to justify the presentation of a paper upon a subject which has been repeatedly and apparently well covered. But since the day that Williams and DeLee apostles developed insomnia over the question whether or not hyperemesis and acute yellow atrophy were separate and distinct entities unrelated to eclampsia, slow but steady and worthwhile progress has been made on the subject. In an assembly of physicians containing even a small group especially interested in the practice of obstetrics, the subject of toxemias must remain now and for some time to come, under the heading of Unfinished Business. I dare say that some of us still do not know that we who as students preferred the Williams text had to hang our heads, because of the nearer correctness of the DeLee interpretation of the micropathology in the lobules of toxic livers.

The classification of the toxemias of pregnancies has for the most part been based upon the salient symptom of the complex shown by the individual toxic patient, or upon the degree of severity of the particular symptom. Such a system of classification is not satisfactory, since it is not directly related to definitive therapy.

Etiological classification is obviously that of choice, but even the better qualified men know little more about the etiology than the physicians

know why lightning originates in clouds. So, in spite of the efforts of Mussey (Mussey, R. D., American Commission on Maternal Welfare, Chicago) and the United States Department of Labor, we must still look to the future for a satisfactory classification. For reasons of simplicity, I divide this discussion into two groups; (1) toxemias of early, and (2) toxemias of late, pregnancy.

### TOXEMIAS OF EARLY PREGNANCY

The distinguishing symptoms of the toxemias of early pregnancy are varying degrees of vomiting, polyneuritis, and acute yellow atrophy of the liver. From an etiologic standpoint the gonadotropic hormone rears its ugly head in the background of each condition; however, I am not insinuating that the hormonal explanation is the sole common denominator of all toxemias. The vomiting of early pregnancy has been so easily controlled since the advent of pyridoxine that many of us lose sight of the fact that we are dealing with a toxic patient, and that slightly less than half of these patients are going to show evidence of toxemia in late pregnancy. If we wait until hyperemesis gravidarum polyneuritis of yellow atrophy has developed, then we have sacrificed our best opportunity for treatment, and once again hidden out incompetence beneath the term "watchful waiting." When the condition becomes grave, we must admit that there was ample time, after the patient first showed toxic symptoms, to treat and control or arrest the condition before extremely detrimental states devel-



oped. We are not here concerned with psychosomatic influences on nausea and vomiting of pregnancy, but I am convinced that patients whose pregnancies have previously been interrupted because of hyperemesis will enter the next pregnancy with such apprehension and fear, that treatment with pyridoxine, hypertonic dextrose, and an environment very nearly the equivalent of hospital rest, should be instituted at the earliest possible moment, preferably prior to the onset of nausea and vomiting. In summary, the patient with nausea and vomiting of pregnancy is a potential victim of severe toxemias and should be treated as such.

#### TOXEMIAS OF LATE PREGNANCY

We are all more interested in the toxemias of late pregnancy because of their potential permanent damage, and because of their all-too-frequent appearance on the top line of death certificates of maternity patients. Here again investigators express great diversity of opinion on practically every phase of the subject, and some are diametrically opposed in their views. For the sake of brevity, I am going to present the principal types of toxemia according to their nomenclature on the unsatisfactory symptomatic basis; and assuming that the causes of toxemia are several and that the mechanism by which a toxic state is brought about is complex, we will consider the problem from the endocrine, vascular and degeneration aspects.

The nonconvulsive toxemia, or low-reserve kidney, takes the form of an acute but mild nephritis in which low-grade renal symptoms are the prominent feature. It is not associated with chronic nephritis and does not eventuate in chronic nephritis; it does not leave residual kidney damage. It differs from preëclampsia in that there is no increased uric acid content of the blood and no lowered  $\text{CO}_2$  combining power. This group includes the essential hypertension. The systolic BP may reach 150 mm., but the diastolic remains disproportionately low, in contradistinction to that of the more acute forms of toxemia. Bed rest, restricted diet, mild saline catharsis and maintenance of fluid balance is usually adequate therapy.

Chronic nephritis complicating pregnancy is quite common, particularly in older multiparas, representing one-fourth of toxemias of late pregnancy, and usually becomes evident about the last third of pregnancy. It originates in some previous disease, such as scarlet fever, in prolonged focal infection, or in previous preëclampsia or eclampsia. It should not be considered a precursor of the eclamptic state, although true eclampsia may be superimposed upon the condition.

The course of treatment depends upon the differential diagnosis from eclamptic toxemia. In most instances a specific, or at least a suggestive, history

is elicited. Ocular findings are of the utmost importance, since albuminuric retinitis is conclusive evidence of chronic nephritis and is not a feature of true eclampsia. Secondary anemia is frequently very marked. Blood chemistry studies are of little value, though N retention points to nephritis since it appears only in the terminal process of eclampsia. The gravity of this complication may be overrated, since the mortality rate in these patients is little higher in unmarried nephritic women of the child-bearing age. The nephritic condition is almost always aggravated by the pregnancy and additional permanent damage is produced. The toxemia may develop at any time during the pregnancy and may result in death at the time, or shortly after the pregnancy ends, as a direct result of the increased renal damage.

Treatment recommended is a trial period of two weeks' bed rest on a 1500-calorie salt-free diet with low protein. This is occasionally followed by reduction in BP and albuminuria, and such patients may be carried to term with little or no increased damage to kidneys; however, if the hypertension persists and large amounts of albumin continue to spill, and especially if retinitis develops, the pregnancy must be interrupted. Even if the woman patient's progress is satisfactory, a distressing and all-too-frequent feature of the condition is the intrauterine death of the fetus. Upon delivery of the macerated fetus, almost invariably the small placenta shows calcium plaques and multiple areas of fibrous infarction. The growth of the fetus should be measured regularly, and cessation of growth with fetal heart sounds remaining is an indication for section if the gestational age of the fetus permits, irrespective of its estimated weight or size.

#### ECLAMPSIA

By definition, eclampsia is a condition of metabolic intoxication, characterized by arterial hypertension, albuminuria and convulsions. A similar condition, without convulsive seizures, much more common and usually present before the convulsive state, is known as preëclampsia. In either phase of this toxemia, quantitative estimation of the placental hormones shows high levels of chorionic gonadotropin and low estrogen content of the blood and urine. Studies of the urinary excretion of the metabolites of estrogen and progesterone have established the fact that a low level of both hormones pertains in late pregnancy toxemia. These changes are similar to those which occur normally just before and during labor, and are in progress before the development of toxemia. An abnormal rise in serum chorionic gonadotropin may predict toxemia some eight weeks before it makes its appearance. Changes in urinary steroid hormones reflecting a premature deficiency of progesterin and

estrogen as a consistent precursor of toxemia have been found to be similar to changes before and during menstruation.

Having determined the presence of a highly toxic factor in the euglobulin fraction of menstrual discharge, to the action of which the local vascular pathology resulting in menstruation is attributed, the similar generalized vascular damage in late pregnancy toxemia may be a manifestation of the presence of the same toxic protein, resulting, as in menstruation, from tissue damage due to withdrawal of hormonal support of the uterine contents. The fact that the same situation pertains just before and during normal labor and delivery suggests that premature senility of the placenta is a background of toxemia. Expulsion or death of the products of conception would eliminate a labile toxin before it has had time enough to cause generalized vascular damage, thus explaining the usual absence of toxic signs in the normal labor and their frequent absence in premature delivery and intra-uterine death.

Whatever the primary cause of toxemia, it seems that the hormone situation in all such cases is at least a contributory factor, and estrogen and progestin replacement therapy is rational, as a means of increasing the blood supply of the placenta and interrupting the vicious cycle which leads to the overwhelming production and absorption of toxin. However, this method is time-consuming and expensive, and so far, the results are not impressive. There is not a doubt that the hormones considerably influence the physiology and pathology of pregnancy and probably form an important link in the etiology of toxemia.

It is difficult to discuss the pathology of pre-eclampsia and eclampsia without reference to premature separation, since degeneration of the renal cortex and anterior pituitary, and micropathologic changes in the liver have been noted in all three. Perhaps it is best to consider the group as components of hypertension albuminuric toxemias of pregnancy. Hertig refers to abruptio placentae as local, or uterine eclampsia.

The basic lesion begins in the decidua at the placental site as an acute arteriolitis, soon to be followed by a fibrinoid degeneration which in turn is superseded by a fibrinoplastic proliferation which almost obliterates the lumina of the vessels involved, resulting in more necrosis with hemorrhage, and the cycle is ready for repetition on a larger scale. There we see that whether the patient suffers from hemorrhage with loss of clotting power, or from the toxemia itself with tissue necrosis, it is all a part of the same fundamental process.

The treatment of eclampsia is fairly well standardized in the use of magnesium sulphate, by both parenteral and oral administration, and hypertonic

dextrose solutions in sterile water by vein. The convulsions must be stopped, preferably by *IV* barbiturate. A salt-free fluid intake of 3000 to 4,000 c.c. must be assured, *IV* if comatose or by mouth if not. Oxygen and blood transfusions are indicated in many cases. When the condition becomes static, labor should be induced by rupture of the fetal membranes. In the Boston Lying-In Hospital the maternal mortality from toxemia was drastically reduced by use of the "veratrone regimen." The rate was reduced to 12 per cent in 1940, as compared with a 25 per cent average for the previous 20 years. The method modifies the aforementioned routine by the hypodermic injection of 5 minims of veratrone on admission, and repeating every 20 minutes until the systolic BP is below 150, pulse below 80, and convulsions have ceased.

In premature toxic separation of the placenta, it is well to remember that, so long as the placenta is in partial physiologic activity, the cycle which produces the toxin and fibrinolytic enzyme is also in operation. I believe that the better statistics come from the Boston Lying-In because of consideration of the time interval and because of a state Dr. Frederick Irving elected to call "the unfavorable cervix." From a mortality standpoint there is not much to choose between hysterotomy and conservative treatment. If the baby seems in good condition, and pregnancy is far enough advanced to insure a reasonable chance of survival, section is done. If not, the membranes are ruptured, the vagina packed, spanish windlass applied, and small doses of pitocin given. I think Dr. Irving's low rate is due largely to the proformance of hysterotomy in the patient having an unfavorable cervix, even though he is certain that the fetus is dead. This shortens the time in which the toxic cycle is in progress. This is more plausible in view of the fact that the operative patients do not die from hemorrhage, or from the operation, but of the underlying toxemia itself.

In evaluating the risk for a given patient in future pregnancies, consideration should be given the blood pressure, the severity of past eclampsia, the duration of that toxemia, the age of the patient and the interval since the eclamptic pregnancy.

The recurrency rate of toxemia in pregnancy after eclampsia was 4 per cent.

In all of the toxemias of pregnancy the fetus fares much better ex-utero after the 35th week of gestation.

Management of eclampsia involves three considerations: (1) Prevention of the disease by adequate antepartum care; (2) termination of pregnancy without regard to the stage of gestation if pre-eclampsia cannot be controlled; and (3) delivery with least possible trauma in frank eclampsia

after convulsions have been controlled and the patient has been brought to the best possible state.

As the years go by, the term toxemia seems to become more and more inappropriate. The more we learn about it, the less we are sure we know. Several clinical entities once grouped under the general heading are being reclassified under avitaminoses, endocrinopathies, chronic vascular disease, etc. Now the term toxemia is being restricted to a group of symptoms mainly hepato-renal in origin.

Among the numerous blessings that the modern obstetrician enjoys is improvement in treatment of hyperemesis gravidarum. We can cure most patients by rest in bed, isolation, good nursing, fluids—salines, glucose, orange juice—vitamin B complex, yeast concentrates, molasses, eggnogs, etc.—some given by vein, some by rectum, some by nasal Levine tube. In addition, we have found injections of thiamine, ascorbic acid and liver extract useful.

One of the most painful decisions to make in a toxic or hypertensive patient is whether to induce labor just before the period of viability. We always try to pass this point, but something must be done if the patient does not improve after weeks of treatment. We fear the permanent effects of the disease on the mother, also that the baby may die any minute while we are waiting. To cap all, we know that sometimes (rarely) Nature surprises us by carrying the gravida through, despite our prognostications—and safely, which means we do not know so much about these conditions as we would like.

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#### ORIGINS OF SOME MEDICAL TERMS

(Harry Wain, Mansfield, O., in *Ohio Med. J.*, Oct.)

**Carbuncle**—Latin, *carbunculus*, a little coal, from *carbo* or coal.

**Eczeema**—From the Greek, *ekzesis*—ek, out and *zeo*, I boil.

**Goiter**—Latin *guttar*, the throat.

**Hangnail**—Angnail, Anglo-Saxon ang, pain.

**Qinsy**—Literally a dog-throttling. Old French term signifying. Greek *kynnangche*—kna, a dog, and *angehein*, to throttle.

**Shingles**—Old French, *cengle*; Latin, *cingulum* or girdle.

**Diphtheria**: The Greek term, *diphthera*, means skin, leather or membrane. Pierre Bretonneau in 1821 read a

paper before the academy of medicine in Paris and proposed the name diphtheritis. This was later changed to diphtheria by his pupil Trousseau.

**Bella donna**: This term is derived from the Italian words *bella*—beautiful and *donna*—lady. It was so-called because Italian ladies of the Sixteenth Century used its juice to dilate their pupils and so make their eyes bright and sparkling.

**Digitalis**: A Bavarian botanist, Leonard Fuchs, in 1541, christened the plant digitalis, because the flowers of the plant resemble a thimble. The German *fingerhut* or thimble was translated into the Latin equivalent *digitalum*.

**Dengue or Dandy Fever**: The term was first applied to the disease by the inhabitants of St. Thomas on account of the stiff awkward gait of those affected. The word is probably a corruption of the Spanish equivalent of dandy—*denguero*.

**Gauze**: This material was so called because it was first brought from *Gaza*, in Palestine.

**Nicotine**: In honor of Jean Nicot, a Frenchman, who first sent the seeds of tobacco to France in 1560 while serving as French ambassador to Portugal.

**Pellagra**: This disease was first studied by Don Caspar Casal in 1725 in Asturia, Spain. It was subsequently described in Italy in 1771 by Francisco Frapolli, who first called it pellagra from the Italian *pelle*—skin, and *agra*—rough.

#### SPLENIC ABSCESS

(R. W. Pollock, Baker, Ore., in *Northwest Med.*, Dec.)

As a complication of infectious disease splenic abscess is very frequently overlooked, and it occurs very much more often than statistics indicate. Puerperal sepsis, pyemia, influenza or pneumonia can be the precursor of this condition; also otitis media, mastoiditis, appendicitis and carbuncle. Indeed any abscess of bacterial origin with lowered local or general resistance may cause secondary splenic abscess.

The clinical picture of splenic abscess is indefinite. The initial focus of infection may be with or without septicemia. The onset may be slow, influenza-like, with fever, sudden, with pain and a tender mass over the left upper quadrant. Unless the capsule is involved, there is no pain. Localized pain is the rule, but it may radiate to the left clavicular left scapular area or along the costovertebral angle.

If the upper pole or the superior aspect is involved, the diaphragm and pleural symptoms will predominate; if the lower pole the symptoms are those of peritoneal irritation. Pressure on palpation, coughing, deep inspiration or forced expiration will increase the discomfort.

Spasticity of the left upper quadrant and enlargement of the spleen are usual. Fluoroscopic or roentgen examination may show a raised diaphragm with or without diminished movement on the left.

Evidences of sepsis, irregular chills, fever and sweating of intermittent type are fairly constant features. Leucocytosis reaches 20,000 to 30,000; in several instances below 10,000. Always immature pmn. cells are increased.

#### FOR BEST MEDICAL CARE SEE YOUR G. P. FIRST

(L. E. Zimmerman, in *Med. An. D. C.*, Oct.)

In this day of heightened specialization and increased public information, the patient or his family makes the initial presumptive diagnosis and the specialist is consulted from the beginning. Most important for the specialist to remember, however, is the fact that the sign or symptom which directed the patient to his office is often only one of many which a complete history, physical examination, and laboratory study may uncover.



## Typhoid Fever Treated With Chloromycetin

WILLIAM G. MORGAN, M.D., and SYDENHAM B. ALEXANDER, M.D.  
Chapel Hill, North Carolina

WITH the discovery and proved efficacy of the sulfonamides, penicillin and streptomycin, an entirely new field of therapy suddenly opened to the medical profession. It was very quickly discovered, however, that there were many disease processes which were either entirely resistant to all of these or which showed very little sensitivity to them. Among such diseases was typhoid fever and until the discovery and isolation of a pure crystalline compound called Chloromycetin (Chloramphenicol) from cultures of *Streptomyces Venezuelae*,<sup>1</sup> there was no drug or treatment for this disease which offered much more than the treatment that we had been using for 25 years or more. By further studies the chemical formula for this drug has been determined<sup>2</sup> and it has now been synthesized. It is being produced in large quantities and is available at fairly reasonable cost.

Woodward and his coworkers<sup>3</sup> on the Malayan Peninsula obtained striking therapeutic effects in ten cases of typhoid fever treated with Chloromycetin as compared with eight untreated cases. In two of the ten cases relapse occurred after 10 and 16 days, respectively, but responded dramatically to a second course of treatment with Chloromycetin. Further reports by McDermott and his associates,<sup>4</sup> Collins and Finland,<sup>5</sup> and many others<sup>6-13</sup> have adequately confirmed the specific antibiotic activity of Chloromycetin in typhoid fever. We report three cases of typhoid fever treated in the University of North Carolina Student Health Service. Two of these were husband and wife, one in the acute phase and one in relapse.

CASE I—G. H., white female, age 23, was admitted to the University of North Carolina Student Health Service Infirmary on January 13th, 1949. She had been ill since January 8th, 1949, and gave a history of general malaise, frontal headache and gradually increasing fever, and had had two chills on the day before admission. She had been seen by another physician on January 10th, 1949, two days after her illness began. He found her temperature to be 102°, leukocyte count 3,000, with no positive physical findings. She had not had typhoid vaccine since the age of six years.

Temperature on admission was 98.6°, but shortly afterwards she had a chill and her temperature quickly rose to 105°. The skin was hot and dry, the pharynx moderately

red, and several small anterior cervical and submaxillary glands and the spleen were palpable. There was moderate abdominal distention with loud rumbling peristaltic sounds. Physical examination was otherwise negative.

The hemoglobin was 78%; leukocytes 3,000—neutrophils: segmented, 73, non-segmented 3, monocytes 3, small lymphocytes 22% and urinalysis negative. The leukocytes varied from 3,000 to 6,500 during the hospital stay, but the polymorphonuclears dropped below 50% on the second day and were persistently low, at one time being 37%. There was never a marked rise in the non-segmented neutrophils. Blood culture obtained on the day of admission was reported positive for *Eberthella typhosa* on January 15th.

As can be seen from her temperature chart (Fig. 1) she was acutely ill for the next ten days. On the second day of hospitalization she developed general abdominal tenderness and generalized cramping abdominal pain, and had three liquid bowel movements. From this time until after Chloromycetin therapy was begun the loose stools were three to eight daily, accompanied by much abdominal discomfort. The liver was never palpated but after the third day there was more tenderness in the right upper quadrant of the abdomen than any other place. The spleen was moderately enlarged and tender during the entire period and remained so during the febrile period, but gradually became smaller and was not palpable on discharge. There was mild periodic nausea but no vomiting. Typical rose spots were noted on the skin of the abdomen and back on the third hospital day and gradually faded. A dry, hacking cough developed on the second hospital day and persisted during the febrile stage, but there were never any positive chest findings either by physical examination or x-ray. The pulse was consistently slow in proportion to the fever. The respiratory rate went to thirty per minute but most of the time was below twenty-five per minute. Blood cultures became negative before Chloromycetin therapy was begun and remained negative as shown on the slide. Also shown on the slide are the results of stool cultures. Only two positive stool cultures were obtained. The last specimen was taken five months after discharge and was negative.

Treatment with Chloromycetin was begun January 20th, when we were first able to obtain the drug. It was given orally in initial dose of 2.5 gm., then 0.5 gm. every four hours during the febrile period and 0.25 gm. every four hours until a total dose of 25 gms. had been given. With each dose liquid Amphojel was given, usually along with milk. There was slight nausea during the first 12 hours of therapy.

Two days prior to Chloromycetin therapy the patient developed an acute pharyngitis, with edema and soreness of throat, although 300,000 units of procaine penicillin in oil had been given daily since admission. An attempt made to culture typhoid organisms from the pharynx was unsuccessful.

This patient received 1,000 to 2,000 c.c. of glucose and saline, intravenously, daily with liberal quantities of vitamin B complex. Ascorbic acid, multiple vitamins, a high-calorie, low-residue diet and large amounts of protein in the form of *Protinal* powder were given. On discharge, February 4th, her weight was two pounds more than on admission.

From the University of North Carolina Student Health Service, Chapel Hill.

To the Fifty-first Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Fayetteville, N. C., February 20th-21st, 1950.

CASE II—A white man, aged 28, admitted later on the same day as his wife, stated that for six months he had not felt well but had had no specific complaint except for easy fatigability. For three days he had had general muscular aches and frontal headache, for two days occasional generalized cramping abdominal pain and two to four loose stools daily; for 12 hours had been alternately chilly and feverish. He had not had typhoid vaccine for four years.

Admission findings: temperature 102°, mild nasopharyngitis, palpable and tender anterior cervical and submaxillary glands, and small discrete, non-tender inguinal glands. There was some abdominal distention, increased peristaltic sounds and general abdominal tenderness, more so in the right lower quadrant. At no time was the spleen or liver palpable. No rose spots were seen and there was no nausea at any time. The remainder of the physical examination was negative except for pallor of the skin and sclerae. At no time did he appear acutely ill. During the first four hospital days his temperature varied between 100 and 104°, once above 104°. It dropped to normal on the fifth day and so remained.

On admission hemoglobin was 74%, red blood cells 3,600,000, leukocytes 4,050—neutrophils: segmented, 37%; non-segmented 5%; small lymphocytes 47%, abnormal lymphocytes 3%, monocytes 6% and basophils 2%. Urine showed 1+ albumin and an occasional hyaline and granular cast. The blood count and urine throughout his stay in the hospital remained about the same. Only one positive blood culture for *Eberthella typhosa* was obtained, that on the third day after admission. Stool cultures became positive for *Eberthella typhosa* on January 19th and so remained.

The patient was discharged on January 24th, after seven afebrile days, during which, except for general weakness, and occasional mild abdominal discomfort, he had felt well.

These symptoms continuing, he was readmitted on February 8th, with history of increasing abdominal discomfort and several loose stools daily for three days. He felt feverish and generally worse, temperature 99.6° to 101° for four or five days, then a daily P. M. rise to 99.4 to 99.6°. The abdomen was tender, maximal just inside McBurney's point. X-ray examinations with barium of stomach and colon were negative.

Routine stool examinations and stool cultures failed to show amoebae or other pathogens except *Eberthella typhosa*. Abdominal symptoms, loose stools and low-grade fever persisting, it was decided to give him Chloromycetin.

This was given orally, in initial dose of 2.5 gm., then 0.25 gm. every four hours until he had taken 25 gms—for fifteen days. Within twenty-four hours the abdominal symptoms were markedly improved and after 72 hours the patient was symptom-free. The frequency and character of stools were normal after five days. His stools remained positive for *Eberthella typhosa* until June, 1949; have been negative since. At no time did he complain of nausea.

This patient later proved to have multiple myeloma and he is now being treated with urethane at Duke University Hospital by Dr. Wayne Rundles.

CASE III—This 24-year-old sophomore medical student was admitted to the Infirmary on February 13th, 1950, complaining of malaise, chills and fever, headache and myalgia of 24 hours' duration. There had been no gastrointestinal symptoms other than moderate anorexia. A careful review of the other systems was entirely negative. He had served in the armed forces during which time he received the routine immunizations, and in addition a full course of triple typhoid immunizations—a routine prophylactic measure for students in bacteriology—in September, 1949. The patient had not been out of Chapel Hill in the eight weeks prior to onset of symptoms. He had last worked with virile typhoid organisms on January 9th, 1950.

On admission temperature was 100.2°, pulse 80, respiration 18. The skin was warm and dry, and no rash was present. The abdomen was soft, non-tender, and there were no palpable masses or viscera. The remainder of the examination was negative except for small, discrete posterior cervical glands. The hospital course is shown in figure II. At no time did the patient appear acutely ill, and the principal subjective complaints were headache and malaise. On the fourth hospital day the spleen became palpable and so remained for four days.

The leukocyte count was 5,600—neutrophils: segmented, 54%, non-segmented 20%. On successive days, the total leukocytes averaged 3,400, with a similar differential count. Repeated urinalyses were negative except for a trace of albumin. Febrile agglutinations on admission, positive titers: typhoid "O" 1:80; typhoid "H" 1:160; paratyphoid "A" 1:320; paratyphoid "B" 1:320; on February 24th, typhoid "O" 1:80; typhoid "H" 1:160; paratyphoid "A" 1:80; paratyphoid "B" 1:160. Cultures of blood drawn on the first three hospital days were positive for *Eberthella typhosa*. As can be seen in figure II, there was a progressive decline in the temperature, which remained normal after 3.5 days of treatment. Concurrently there was a marked improvement in sense of well-being. The patient resumed class work on February 25th, 12 days after the onset of symptoms. Follow-up blood and stool cultures on March 1st were negative. Positive serum agglutinations on March 6th were: typhoid "O" 1:160, typhoid "H" 1:320, paratyphoid "A" 1:160, paratyphoid "B" 1:160.

#### DISCUSSION

These are the first cases of typhoid fever seen in the University of North Carolina Student Health Service in the past seventeen years. Most of us think of typhoid fever last as a possible diagnosis since it is now seen so infrequently. It is well to remember that many persons do not take typhoid vaccine regularly, as evidenced by the fact that our first patient had not had the vaccine since she entered grammar school and our second had had no vaccine since leaving the Army four years ago. Moreover, the history of recent immunization does not eliminate the possibility, as shown in case III.

When one considers the history and physical examination and laboratory findings of these patients on admission, it is obvious that they could have been suffering from any one of several diseases. Since we have, each year, many cases of mononucleosis at the University of North Carolina, we thought of this first, and if routine blood cultures had not been done the diagnosis would certainly have been delayed several days.

Other antibiotic drugs, including aureomycin, have been used in the treatment of typhoid fever with disappointing results.<sup>4</sup> In Chloromycetin we seem to have a drug which, given orally, has a specific antibiotic effect on *Eberthella typhosa*, and which has no serious toxic effects. This is certainly true in these cases. One of the antacids and/or milk given with each dose seems to prevent or decrease nausea. As observed by us in these cases, and by others<sup>3,4</sup> who have used this drug in typhoid fever, the improvement in symptoms, especially the abdominal symptoms, was dramatic, sometimes even

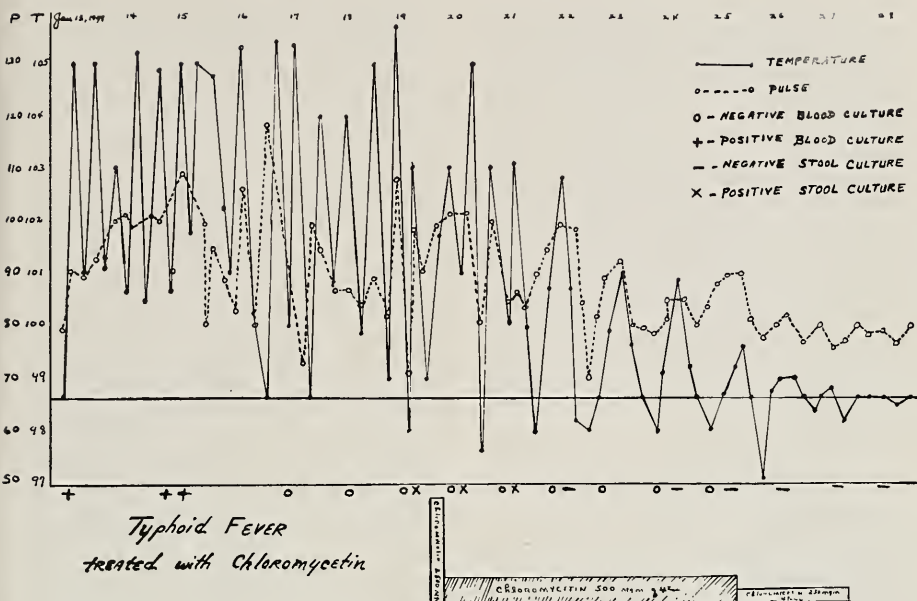


Figure 1

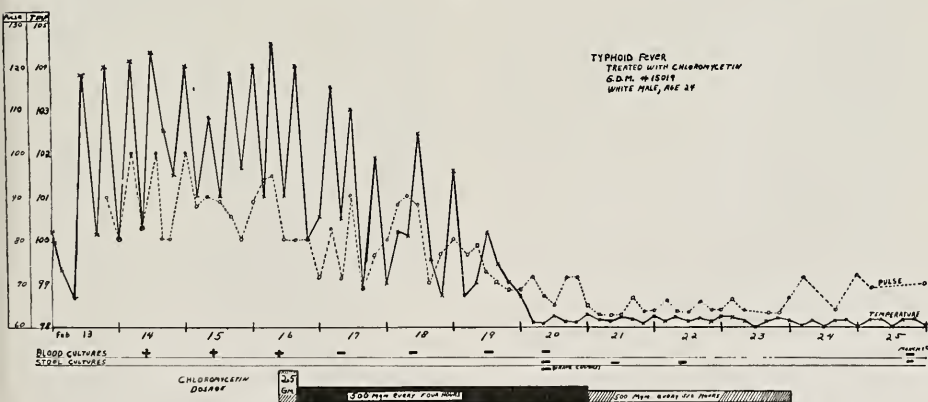


Figure 2

before the patient became afebrile.

Our second case, in which recovery was made without specific treatment, after only six or seven days of acute illness, is probably explained on the basis of recent vaccination. His symptoms recurred, however, in mild form and were relieved promptly by Chloromycetin, just as has been found by others<sup>9, 10</sup> who have reported treatment of relapses

with this drug. This is true in relapse after recovery from the acute phase of the disease with Chloromycetin therapy.<sup>3, 4</sup> We seem to have a drug against which the organism does not develop resistance,<sup>7, 8</sup> which is not true of most other antibiotics.

In case III, as nearly as can be determined, the last possible exposure was on January 9th, 1950,



35 days prior to the onset of symptoms. This is longer than the usually accepted incubation period, which raises the question of whether the recent immunizations were a factor in the delay of onset following exposure to a large number of virulent organisms.

In case I the stool cultures quickly became negative and so remained. In case II the stools were positive before, during and after treatment. In case III the early initiation of therapy apparently was so quickly bactericidal that no positive stool cultures could be obtained. This makes one feel that Chloromycetin has little to offer in the treatment of the carrier. This seems peculiar since the drug is given orally and gives relief from systemic symptoms and the local intestinal symptoms and yet does not destroy the organism.<sup>5,10</sup> Further studies on the virulence of organisms in carriers in relation to their sensitivity to Chloromycetin might help explain this.

Two different methods of treatment in relation to relapse have been suggested. One method is to treat each patient for two to three weeks with the idea that the drug is more bacteriostatic than bactericidal and that the organism is held in abeyance until the development of immunity in the host. Another method is to treat each relapse as it occurs, since in no case has there been a failure to control the symptoms in relapse with Chloromycetin.

In our cases we followed the dosage schedules as recommended by Parke, Davis and Company's Clinical Investigation Division—50 mgm. per kilogram of body weight as the initial dose, then in the acute case 500 mgm. every four hours until afebrile, then 250 mgm. every four hours until 25 gms. had been given. In the relapse case the initial dose was the same, but 250 mgm. was given every four hours until 25 gms. had been given.

We are now conducting a study of Chloromycetin therapy in mononucleosis, and have encountered no toxic symptoms except slight nausea in several cases and nausea and vomiting in only two cases severe enough to require stopping the therapy. We have not administered Chloromycetin by rectum; according to Hewitt and Williams<sup>6</sup> it has been done successfully. These authors also recommend milk and amphotel with each dose as a routine.

#### SUMMARY

1. Two cases of typhoid fever in the acute phase successfully treated with Chloromycetin are presented.

2. One case in relapse, after the patients' recovery from the acute phase without specific therapy, with successful treatment of the relapse, is presented.

3. The importance of diagnostic suspicion and early blood cultures is stressed.

4. Chloromycetin appears to have a specific antibiotic effect in the acute phase of typhoid fever.

5. Chloromycetin appears to be effective in treatment of patients in relapse, but does not cause the organisms to disappear from the stools of these relapse cases.

6. No toxic manifestations from Chloromycetin were noted.

7. It is pointed out that vaccination does not seem to give absolute assurance that one will not contract typhoid fever. The question is raised as to whether immunizations will give sufficient partial immunity to prolong the incubation period following exposure.

8. The importance of general nursing care and general supportive treatment is pointed out.

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#### MEASLES ENCEPHALITIS

(J. B. Seagle, Rochester, Minn., in *Jl. Indiana Med. Assn.*, Dec.)

There has been an increase in the number of cases of encephalitis as a sequela of measles in the last 30 years. The onset may be abrupt, with convulsions, restlessness, and delirium; or it may be gradual, with lethargy slowly deepening into coma.

Twelve cases of measles encephalitis were admitted to an Indiana hospital for children between January 1st and July 1st, 1948. Of the 12 children, one died, four were left with some physical disability, and seven were physically normal when last seen.

WHEN AN AUTHOR (Editorial in *Rocky Mountain Med. J.*, Oct.) asks himself whether his message fills a gap in the world's knowledge or whether it settles a controversy, he may decide it does not. If such is the case, the wastebasket should receive another contribution.

# DEPARTMENTS

## HUMAN BEHAVIOUR

For this issue E. H. ALDERMAN, M.D., Richmond  
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### ALCOHOLIC DETERIORATION

TOXIC PSYCHOSES at times result in as much permanent mental deterioration as is found in organic psychoses, such as senile dementia or psychosis with cerebral arteriosclerosis. This is presumably because of the direct effect of the toxic agent upon nervous tissue or its vascular system, or of the toxicosis produced by the deprivation or imbalance of essential nutritive elements for which the toxic agent has been substituted.

The toxic substance most often found responsible for permanent mental impairment is alcohol. Here we are at once upon debatable ground. The use of alcohol to excess is often symptomatic of, or resultant from, other mental illnesses such as manic-depressive psychosis, schizophrenia, or paresis. Alcohol in excess is frequently the cause of the psychopathic or inadequate personality coming into conflict with society or the law.

Nevertheless, we recognize alcohol as the causative agent in certain of the acute psychoses—roughly 10 per cent—and, following these, many instances of gradual, progressive enfeeblement of the intellectual faculties leading to mental deterioration.

One of the early symptoms is loss of memory. With this is inability to acquire new impressions and there is a resultant paucity of ideation, and lack of ability for practical analysis of situations.

The judgment is always affected and the victim realizes imperfectly his condition and the significance of his behavior. There is emotional disturbance, marked usually by irritability and indifference. The deteriorated alcoholic lacks power of application to his work or his duties, and becomes insensitive to them. He becomes sullen and morose, loses in ethical sense. He no longer cares for his personal appearance, and is indifferent to the social and economic degradation which he brings upon himself, his friends, and, worst of all, his family. Eventually he will lie, beg, or steal to satisfy his craving for liquor, his only apparent interest.

As a result of the loss of memory, together with the inability to see things in their true light, the sufferer from chronic alcoholic deterioration is apt to develop delusions, most often of persecution or, in relation to his family, of intense jealousy. From faulty perception he may develop hallucinations, most often of visual and auditory type.

The irritability, outbursts of temper and impul-

sive tendencies developing from his delusions and hallucinations may prompt him to deeds of violence, even to the commission of murder.

In other cases, through a process close akin to the regression seen in the deterioration of schizophrenia, there may be development of childishness or helplessness to the extent that the chronically deteriorated alcoholic may need constant custodial care.

Alcoholic dementia is insidiously progressive. Inasmuch as the mental changes are accompanied by physical changes in the nerve tissues and their vascular supply, it is not probable that the deteriorated alcoholic can ever be completely restored to his previous state of health and vigor. However, in that small percentage of cases in which cessation of alcoholic excesses is "miraculously" brought about, the deterioration is slowed or stopped, and the victim responds in some degree to a careful regimen of rehabilitation.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### MESANTOIN IN TREATMENT OF EPILEPSY

OF 60 CASES used in this study<sup>1</sup>, ranging in age from seven to 78 years, all except two were on dilantin and phenobarbital—with poor to fair results, none controlled completely. Of 54 cases of grand mal convulsions treated with mesantoin, 13 have been controlled completely for a period of from six to 24 months at the time of this report. Of the other 41 cases of grand mal seizures, 36 were definitely improved and five unimproved; none were made worse.

The remaining six cases were psychomotor, Jacksonian and petit mal seizures. Of the three cases of psychomotor equivalent attacks, one has been controlled, two have been improved. Of the two cases of Jacksonian epilepsy, one has been improved definitely, the other not improved. Mesantoin was employed in one case of petit mal in which tridione had failed. The patient, aged 7, was having from four to five classical petit mal attacks daily. These promptly subsided when the dose of mesantoin reached 400 mg. (4 tablets) daily. This is an exceptional case; mesantoin is not recommended for routine use in petit mal.

The commonest side effect in these was drowsiness which appeared in 10 cases, subsided in most instances after a few weeks. There was no case in which medication had to be discontinued for this cause.

A transient skin rash appeared in four cases; slight reduction of dose for two or three weeks usually clears. A persistent eczematoid eruption in

1. D. J. Dyer, St. Louis, in *Jl. Mo. Med. Assn.*, March.

two cases required discontinuation of the drug.

In this series menantoin completely controlled 22 per cent of the patients with grand mal seizures from six to 24 months (at the time of this report), whereas dilantin failed in this respect.

Distressing toxic symptoms encountered with dilantin, such as gum hyperplasia, hirsutism, extreme ataxia and gastric discomfort, were not observed with mesantoin.

Due to its lower toxicity mesantoin has a wider therapeutic range than dilantin.

The best results with mesantoin were from gradually increasing dosage until anticonvulsive level was reached and at the same time gradually reducing previous medication, if any.

Two cases are reported which did not respond to anything except mesantoin.

Mesantoin is a definite improvement over any anticonvulsant heretofore used and it is the drug of choice in treating grand mal seizures, along with at least trying it in psychomotor and Jacksonian seizures.

## CALCIUM DEFICIENCY IN INFANTS AND CHILDREN

DASH<sup>1</sup> reminds that calcium is the material structure of bones and teeth; it supplies ions which function in muscle contraction and the control of irritability of the nerve cells; it plays an important part in normal heart action, and in coagulation of blood and milk.

He goes on with a presentation of the subject well worth our attention:

The intake should be from 725 mg. per day in infancy to 1200 mg. at 10 to 12 years, of which 140 to 300 mg. should be retained. Only slight rises in serum levels are noted after food ingestion, showing that it is rapidly deposited in bone and other tissues after being absorbed in the blood stream.

The older textbooks on pediatrics divided the symptoms of rickets into bony and nervous; for some reason the colored infant show a predilection to the bony type, the white child more often the nervous. In spite of cod liver oil, we still see proven cases of rickets. The nervous manifestations are too often overlooked.

We have recognized the need of calcium in pregnant women, its administration now is almost a routine measure. We know that the teeth have a marked tendency to decay, nature taking the calcium from them to give to the developing fetus.

Manifestations we see today in spite of routine use of vitamin D are blue sclerae, head-sweating, head-rolling, exaggerated reflexes. These children do everything to excess—play or work, they tire easily, and usually have a high I. Q., do well in

school but are unsettled and unstable. They also show marked allergic tendencies. The teeth decay early, it is rare indeed today to find a child whose temporary teeth have remained intact until the eruption of the permanent ones. Often with the nervous symptom there is some evidence of bone involvement. Knock knees and more marked rachitic evidences are seen but not so frequently.

At present we are unable to prove calcium deficiency by laboratory procedures. Blood calcium tests are notoriously unreliable except in severe cases such as tetany.

Empirically these do well on the administration of some form of calcium, with of course vitamin D.

In any spasmodic tendency—so-called idiopathic, infantile convulsions or epilepsy (especially petit mal)—calcium is given as an adjunct to dilantin and other more specific therapy. In allergies, bronchial asthma and laryngismus stridulus calcium is a useful adjunct.

## UROLOGY

RAYMOND THOMPSON, M.D., Editor, Charlotte, N. C.

### EXPECTANT TREATMENT OF ENLARGED PROSTATE

BENIGN prostatic hypertrophy becomes a disease only when the urinary flow is obstructed. The prostate rarely enlarges much after 60. Periodic symptoms are usually due to congestion.

When enlargement causes little residual urine, acute retention has not occurred, and micturition is not difficult, operation should be delayed, but conditions likely to produce vascular engorgement are carefully avoided.

Chapman<sup>1</sup> advises expectant treatment in 20 per cent of all office and hospital cases of benign enlargement of the prostate. Surgery was not a part of the treatment in 114 cases of this description, nor in 15 because of risk or the patient's desire to avoid operation. Obstruction failed to increase in 112 instances and progressed in only one case, that of a man over 60 years of age.

Observation continued 1½ to nearly 10 years. Prostatectomy was finally done in 12 cases because of obstruction, and in one because of severe hemorrhage. Although 18 deaths occurred, all were due to heart failure, malignant tumor or other factors unrelated to the prostatic condition.

Overgrowth of the prostate is apparently an involutional process active chiefly in the fifth and sixth decades. Sudden distressing symptoms are due to changes in vascularity. If obstruction is considerable congestion will be maintained by efforts to empty the bladder.

1. G. E. Dash, St. Andrews Hospital, in *Jl. Maine Med. Assn.*, Feb.

1. T. L. Chapman, Ch. M., Glasgow, Scotland, in *Lancet*, 257: 684-688, 1949.



Symptoms resulting from slight congestion or from irritation alone may disappear for long intervals and become no worse on recurrence. In many individuals under the age of 60 the condition is nonprogressive. Medical help is generally sought because of frequent or hesitant micturition or hematuria.

To prevent dysuria, chilling and alcoholic excess are avoided. The bladder must be emptied as soon as possible after the first impulse is felt. Any change of urinary symptoms or evidence of failing health should be reported to the physician.

Difficult micturition, volume of residual urine, and age are important considerations in deciding that operation is indicated in any given case. Size of the prostate, trabeculation of the bladder, urinary frequency, and hematuria are not so significant.

Urinary obstruction is caused by the shape of an enlarged prostate rather than size. All degrees of hypertrophy are noted among cases unsuitable for operation. With the largest glands, symptoms may be slight and the volume of residual urine 1 oz. or less.

#### PROCAINE PENICILLIN G IN THE TREATMENT OF GONORRHEA

IN ORDER to supply the readers of this Department's offerings with best and latest information on the treatment of gonorrhea, Hogan's<sup>1</sup> article is abstracted.

Since the introduction of penicillin in oil and beeswax the usually accepted dosage for gonorrhea has been 300,000 units. With this dosage, occasional clinical and bacteriologic failures have occurred.

Tucker recently recommended 500 units of procaine penicillin per Kgm. of body weight—36,000 units as a routine therapeutic dosage in uncomplicated acute gonorrhea, one-eighth of the usually accepted dosage. A study was undertaken to verify 1) the effectiveness of small doses of procaine penicillin in the therapy of gonorrhea, 2) the minimal effective dose, and 3) the validity of a 48-hour post-treatment culture as a test of cure with procaine penicillin.

Therapy for 113 patients consisted of a single intramuscular injection of procaine penicillin G in oil, containing 2 per cent of aluminum monostearate, in dosages of 100, 200, 250, 300, 500 and 1,000 units of penicillin per Kgm. of body weight.

This study included only cases of acute uncomplicated gonorrhea in which the pretreatment culture was positive and the organism was confirmed as the gonococcus by sugar fermentation. Failure was defined as 1) persistence of clinical symptoms or 2) presence of positive cultures 24 hours or longer after therapy.

1. R. H. Hogan et al., U. S. P. H. S., in *Jl. Venereal Dis. Inf.*, April.

In this series 10 per cent were cured at 100 units per kilogram of body weight. Increasing the 100-unit dosage 6-fold to 10-fold resulted in a cure rate of 93 per cent. There was a rapid and pronounced increase in cure rate from 10 to 70 per cent with only a 3-fold increase of the 100-unit dosage (100 units increased to 300 units).

Maximum therapeutic results may be expected from dosages in excess of 1,000 units of penicillin per Kgm. (2.2 lb.) of body weight.

## PROCTOLOGY

RUSSELL BUXTON, M.D., *Editor*, Newport News, Va.

### CONGENITAL MEGACOLON (HIRSCHSPRUNG'S DISEASE)

CONGENITAL MEGACOLON was first described by Hirschsprung in 1886 and the cause of it is not known. It has been thought that abnormalities of the parasympathetic innervation of the large bowel is responsible, or it may be that the sympathetic nerves are hyperactive. At any rate, the peristalsis of the colon is definitely subnormal and the anal sphincters are spastic. In addition, it has been shown that there is reduction in sensitivity of the bowel because the patients are not conscious of colonic contractions, and dilatation of the sigmoid by an enema does not produce discomfort. Clinically, there is tremendous dilatation of the entire colon from the ileocecal valve to the sigmoid and there is a tremendous collection of fecal material in this distended bowel.

In early infancy the parents notice an enlarged abdomen and obstinate constipation. The patients are generally subnormal mentally and vomiting is conspicuous by its absence. Examination shows distended abdomen with tympanites. The colon may be palpable and rectal examination shows no obstruction at the anus or in the rectum. X-ray examination, using a flat plate, may show the distended bowel, and a barium enema can be used to confirm the diagnosis; but caution must be observed, because so large an amount of barium being inserted into the bowel it may be very difficult to remove it.

Conservative therapy for megacolon consists of a good dietary regimen, and colonic lavage. Dilatation of the anus will help in some cases. Surgical treatment consists of cecostomy if necessary, and requires resection of the dilated portion of the bowel if the lesion is segmental. Complete colectomy has been used but can be dangerous. Sympathectomy has been advised, the lumbar sympathetic ganglia being removed. However, this has proved to be of little value.

More recently, Swenson et al.<sup>1</sup> have shown that in children with congenital megacolon peristalsis

does not continue through the rectal sigmoid, which they attribute to a lack of peristalsis in the rectum. Swenson, in 34 cases, resected the rectosigmoid. In 33 of these cases he had an excellent result and his work shows great promise.

In summary, megacolon is a congenital disease which may result from derangement of the nerve supply of the large bowel or may be due to lack of peristalsis in the rectosigmoid. Conservative therapy will relieve milder cases but the more severe cases should have colectomy or resection of the rectosigmoid.

1. Swenson, O. Rheinlander, H. F., and Diamond, L.: Hirschsprung's disease; new concept of etiology; operative results in 34 patients. *N. E. J. Med.*, 241:551-556, 1949.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### LABORATORY METHODS AND THE GENERAL PRACTITIONER

LABORATORY METHODS in general are not diagnostic. They should be employed to conform or develop well-considered clinical impressions, or as a guide to the progress of treatment. Blind dependence upon laboratory results will often result in errors of diagnosis. There are inherent errors in most clinical laboratory tests, even when performed with the greatest care.<sup>1</sup>

The clinician must know not only the variations of normal values, but also the probable and possible range of abnormal values. Values beyond the range of probability should be viewed with skepticism. A blood count that varies widely from day to day just doesn't make sense.

A few procedures accurately performed are of far greater value than a long list of mistakes. The isolated physician, working with simple equipment, but able to correlate his clinical and laboratory findings, may develop greater accuracy than the large well equipped laboratories.

Every physician should have the materials and ability to accurately examine the formed elements of the blood. The examination should include a red cell count, white cell count, hemoglobin determination, differential white count and sedimentation rate, facilities to perform a bleeding time, coagulation time, clot retraction, platelet count, reticulocyte count and icterus index, when indicated.

These tests will suffice to indicate whether a detailed blood study and bone marrow examination are necessary.

A low white count may indicate a virus pneumonia, undulant fever, influenza, a virus disease, malaria, etc. A differential white cell count will rule out a leukemia; a bleeding time, coagulation time

and platelet count may point out the cause of the purpura.

Sedimentation rate is one test that no physician can make an excuse for not performing. It costs practically nothing, is simple to run, and tells much. It is not a diagnostic test; except that there are two types of diseases, other than pregnancy, in which the sedimentation of erythrocytes is increased. These are inflammation and malignant growths.

The test has considerable value in the differential diagnosis of many inflammatory lesions. It also is of tremendous value in determining the progress of rheumatic fever, arthritis, virus pneumonia, tuberculosis, etc. If a malignant tumor is removed completely the sedimentation rate should return to normal within six weeks.

#### *General Consideration of the Test*

1. The anticoagulant must not shrink the red cells.
2. Blood should stand not more than one hour.
3. There should be no bubbles in the column of blood.
4. The tube must be absolutely perpendicular.

#### *Methods*

Westergren, Wintrobe and Cutler are all satisfactory.

#### *Interpretation*

1. Increased rate in tissue breakdown, acute infectious diseases, carcinoma, nephritis, nephrosis, gout, rheumatic fever, rheumatoid arthritis, coronary thrombosis, virus pneumonia and pregnancy.
2. Decreased or normal in hemolytic jaundice, sickle cell anemia and polycythemia.

All doctors in most States have available the facilities of the State Public Health Laboratories for agglutination tests. Both positive and negative tests must be received with due regard for the fact that agglutinins or antibodies may be slow in developing or may be non-specific for the disease being studied. Cross agglutination and vaccinations or injected antigens may make these tests difficult to interpret.

The diagnosis of undulant fever from a low positive titre, without a history of an acute febrile episode in the course of the disease, is open to question.

A negative test followed within a week or 10 days by a positive test and increasing agglutination titre is definite evidence of an acute infection.

Positive in typhoid fever, 3 or 4 plus in 1-80 or higher dilution with O antigen.

Dysentery—in 1-80 or higher dilution is diagnostic.

Brucellosis—in 1-80 dilution suggestive. Cholera vaccination and tularemia give cross agglutination.

1. Lee H. Leger, M.D., Kansas City, in *Jl. Kans. Med. Soc.*,

Undulant fever vaccination affects the test.

Tularemia—in 1-40 dilution or higher diagnostic. Cross agglutination occurs with undulant fever.

Rickettsial diseases—Agglutination tests using OX19, OX2, OXK are suspicious if positive in dilution of 1-80, or positive in 1-160 dilution.

Infectious mononucleosis—A titre of 1-56 is suspicious, of 1-112 positive if there is no history of the patient having taken horse serum. A titre of 1-224 positive even with a history of the patient having horse serum.

Lymphatic leukemia usually doesn't give a titre above 1-7.

Serological tests are not to be accepted on faith alone. Both false negative and positive reactions occur. Two tests of different types should be reported as repeatedly positive before therapy of syphilis is undertaken.

For two to six weeks after the initial lesion appears, only darkfield examination will make a positive diagnosis. Serial quantitative tests are of tremendous value in following the effects of therapy.

Bacteriological facilities are not available in many areas. Many times the white blood count and a Gram's stain will aid in the decision as to whether antibiotics will be effective or not.

It is satisfactory to do qualitative tests on a single urine specimen. Quantitative tests should be run on a portion of a 24-hour specimen. Random urine specimens obtained *one or two hours* after a meal are the most likely to contain abnormal substances; *the first morning specimen is the least likely to contain them.*

Glycosuria can be detected by the Benedict test or by the Clinistest. The latter is much simpler, and although chiefly a qualitative test, will suffice as a crude quantitative test. The Clinistest is adaptable for a diabetic patient's use.

Acetone, diacetic acid, urobilinogen, and bilirubin tests on urine are extremely helpful as special office procedure when indicated.

For renal function the Mosenthal, or some dilution or concentration tests, and the PSP tests are suitable as office procedures, but no substitute for the urea clearance, etc., if they are available.

The study of the urine sediment (centrifuge specimen) will often indicate the presence or absence of urinary tract disease. Acute nephritis cannot be treated properly without study of urine for red blood cells and casts.

Blood chemistries can be practically run as office procedures. They are not as technical procedures as a blood count. They do require well trained technical help and more equipment.

Non-protein nitrogen, blood urea, blood sugar, blood calcium, and blood cholesterol in the hands of a graduate or well trained technician are easily accomplished.

Blood proteins, uric acid, CO<sub>2</sub> combining power, etc., should be left for the larger laboratories.

The gastric mucosa secretes pepsinogen, renninogen, and HCl. HCl activates these enzymes into pepsin and rennin, also combines with proteins to form acid metaprotein. The latter is measured as "combined" acid.

Contraindications to gastric analysis are cancer of the esophagus, aortic aneurysm, esophageal varices, cardiac decompensation, allergy (histamine), recent hemorrhage.

Tube—Ewald or Boas, Levin, Rehfsuss.

Types of test meals—Ewald—arrowroot cookies and water, alcohol—50 c.c. of 7 per cent alcohol, histamine—.25 mg. histamine dihydrochloride or diphosphate.

Examination of gastric contents should include—quantity, color, odor, mucus, reaction, acids, pepsin, rennin, blood, bile, cells.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., Editor, Charleston, S. C.

### MICROGNATHIA

MICROGNATHIA is a condition in which at birth the lower jaw is fully developed except that it is abnormally short. Associated with it there is commonly difficulty in breathing, retraction of the sternum, and cyanosis. The tongue is normally held forward by the attachment of the genioglossus to the symphysis menti. In micrognathia the tongue does not have its normal forward support. As a result it falls backward and downward, causing obstruction to inspiration. In some cases the contact of the tongue with the throat causes vomiting, thus interfering seriously with nutrition. This syndrome was described by Dodd and others some years ago.

In 1946 Beverly Douglas devised a plastic procedure which he found most satisfactory in affording relief to this small but unfortunate group of cases. More recently he has reported<sup>1</sup> additional cases in which the operation has proven equally effective.

In principle it consists in suturing the tongue in a forward position. The under surface of the end of the tongue is denuded of mucosa, likewise a corresponding portion of the floor of the mouth, the alveolar ridge, and the posterior aspect of the lower lip. The tongue is held forward by a stay suture passed through the full thickness of the tongue and the lower lip. The mucosal edges are approximated. The sutures are removed in ten days. With the tongue held in a forward position, the infant is relieved of the inspiratory obstruction and no longer vomits. After a period of weeks or

<sup>1</sup> Plastic & Reconstructive Surgery, Vol. 5, p. 113, Feb., 1950.



months the tongue can be released. Minimal scarring of the lip results.

Editorial Note:—In a recent case of micrognathia associated with cleft of the palate, a tracheotomy was performed and tube feeding was instituted. Suturing the tongue forward in the manner above described permitted removal of the tracheotomy tube, and discontinuing feeding by tube.

## DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

### IMMEDIATE TOOTH-BRUSHING WITH A NEUTRAL DENTIFRICE REDUCES INCIDENCE OF DENTAL CARIES

IT IS NOW GENERALLY ACCEPTED that dental caries is initiated by an acid decalcification of the enamel surface under an organic coating or dental plaque. The acids are for the most part formed very rapidly from fermentable carbohydrates. In caries-active mouths the acids are formed extremely fast. In many mouths free acid, in sufficient concentration to decalcify the tooth, may be present on the enamel surface within three minutes after the ingestion of the fermentable sugar; in most cases the maximum acidity on the tooth surface is present within 20 minutes after the ingestion of sugar and persists 30 to 90 minutes. Thus, the carious process is not ordinarily a long continuous process, but is an intermittent one, and consists of a series of short periods of decalcification, interspersed with periods in which no decalcification occurs but putrefaction may take place.

A large number of variables, many of which are present in most mouths, combine to render the acid harmless or to prevent its formation. The degree of protection in the population of so-called "civilized" countries is ordinarily not sufficient, so that most people suffer, to a greater or lesser degree, the ravages of dental caries. This is probably due to a increased rate of acid production in most cases, rather than to a decreased amount of protection. The reason is obvious in many instances, but there are still many factors that require further investigation.

One method of caries control that has never adequately been tried is that of simple oral hygiene procedures. If the maximum acidity is reached 20 minutes after the eating of sugars, a thorough cleansing of these substrates from the mouth, along with any acids formed within this interval of time, should prevent the initiation and progress of a carious lesion. A water or antiseptic rinse would not remove much of the occluded debris or plaque material but, since the fermentable sugars are water-soluble, it could conceivably dissolve and

flush from the mouth much of the acids and fermentable sugars.

Another possible method—and one that is in general use for cleansing the mouth—is brushing the teeth. The usual routine has been to brush the teeth in the morning on arising and just before retiring. If tooth-brushing is to be effective in the control of dental caries, it must be performed immediately after each ingestion of sugar-containing foods. A clinical experiment was started to determine the effect of proper brushing of teeth.

The preponderance of evidence, however, indicates that an abrasive substance is necessary for proper cleansing. Since pastes are more widely used than powders, it was decided to use paste only. In this experiment<sup>1</sup> an essentially neutral paste, an alkaline paste, and an antiseptic paste were investigated. The neutral paste contained dicalcium phosphate as the abrasive. This paper deals with the neutral paste only. The results of the other groups will not be available until a later date.

A total of 946 individuals comprising 423 controls and 523 test subjects completed the experiment. They comprised groups of liberal arts students from a number of colleges over the country.

All of those in the group were instructed individually to brush their teeth thoroughly within 10 minutes after each ingestion of food or sweets, and when brushing was impossible to rinse the mouth thoroughly with water, using an accepted technic rinsing the dentifrice from the mouth immediately after brushing. The persons in the control groups were not supplied with dentifrices or brushes and were instructed to continue with their customary oral hygiene habits. Only in exceptional cases were the teeth brushed only once per day or not at all.

At the end of the experiment, it was found that the individuals in the test group had a significantly lower incidence of dental caries than those in the control group.

The clinical results of the first-year group indicated an increase in carious surfaces of 0.8 cavities per person. This is a reduction of caries activity of 63 per cent when compared with the control group included in this experiment. The results are identical when compared with the individuals of the U. S. Military Academy. When the results are compared with the U. S. P. H. S. statistics and those of individuals in the vicinity of New York City, there is a reduction of 45 per cent and 53 per cent, respectively.

X-ray evidence on the first year study shows a 63 per cent reduction in caries activity compared with the controls.

The summary very modestly states:

A clinical test on the efficacy of brushing the teeth immediately after the ingestion of foods with a dicalcium phosphate detergent dentifrice, indi-

1. L. S. Fosdick, Ph.D., Chicago, in *Jour. Amer. Dental Assn.*

cates that dental caries can be materially reduced by this method. The results indicate that by means of simple oral hygiene procedures dental caries activity can be reduced. The results are in accord with the generally accepted theory of the carious process and materially strengthens this theory.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### INTRARTERIAL PREFERABLE TO INTRAVENOUS INFUSION IN GREAT EMERGENCIES

HALE<sup>1</sup> offers reasons for preferring, in certain cases, to inject blood and other liquids into an artery, rather than into a vein; and he describes the technique.

In arterial infusion the needle, or cannula, is directed toward the heart. The fluid injected should be blood, but saline or glucose solutions are effective for short periods.

Sufficient pressure in the aorta must be built up *immediately* so that blood flow to the coronary and cerebral arteries is reestablished. The intravenous route is satisfactory in patients who have a systolic b. p. as low as 50. But in individuals in whom there is cardiac arrest or greatly diminished cardiac output, with indiscernible pulse and absence of b. p., arterial infusion affords a means of taking over temporarily the function of the heart by supplying blood to the aorta and thence immediately to the myocardium and the brain.

Apparatus: A Kelly flask containing the fluid to be administered, the means of applying a measured pressure to the air over the fluid and a tube which delivers the fluid from the flask to the artery. The mouth of the flask is fitted with a rubber stopper through which a short glass tube connects by means of a rubber tube to a hand-pressure bulb and aneroid manometer. The small-mouthed commercial flask is modified by replacing the ball valve with a glass tube, reaching to 1 cm. of bottom. In either case the pressure is applied through this tube to the volume of air over the solution. The disposable plastic tubing may leak if pressure of 200 to 300 mm. of Hg is applied and should, therefore, either be ligated in place or replaced with a rubber tube with a fairly thick wall with a small lumen and should terminate in an adaptor which will fit a 15-gauge needle or cannula.

Any available artery may be used—the femoral if it has a pulse, the aorta when it is present in the operative field, whether in the chest or abdomen, may be the site of *needle* puncture. The radial is ordinarily employed. Cannula is inserted and secured by means of a ligature. The pressure above

the fluid is 100-300 mm. Hg. The clamp is removed and the fluid allowed to flow. The b. p. is checked frequently, by usual means, or by reducing the pressure over the fluid until it just stops flowing. At this point, if the meniscus of the fluid is level with the patient's heart the reading on the manometer dial gives an accurate reading of the radial systolic pressure.

It is safe to start the infusion of fluid at a pressure of 300 mm., at a lesser pressure in arteriosclerotic individuals. The pressure should be reduced as soon as a reasonable b. p. has been established, and then the infusion should be continued slowly at a pressure of 10 to 20 mm. Hg. above that of the patient. Even though fluids are being administered intravenously at the same time it is well to leave the cannula in place until the b. p. has been reestablished at a safe level. At the conclusion the radial artery may be ligated and the incision closed. It is not difficult to suture the longitudinal incision in the artery using very fine silk on an atraumatic needle.

The blood given by this method is to be cross-watched with that of the patient whenever possible, in an emergency, type-O blood with an agglutination titre less than 1 to 64 may be used with safety. Great care must be exercised in the IV inj. of fluids under air pressure in order to avoid the danger of massive air embolism.

Arterial infusion affords a valuable emergency means of reestablishing coronary and carotid circulation in severe hemorrhagic hypotension.

### PAINFUL HIPS

THE COMMONEST cause of painful hips in people of middle age or older, says Thompson,<sup>1</sup> is degenerative disease of the hip joint, and this condition should be sought when the patient complains of pain in the knee or thigh or in the low back, as well as when the complaint is of pain in the hip.

Going on from this premise:

The disabling factors are: 1) Pain on motion due to irregularities of the head of the femur and the acetabulum; 2) limitation of motion due to the incongruity of the articulating surfaces; 3) muscle spasm resulting in eventual flexion and adduction contractures and the limp produced by this deformity.

If limitation of motion is minimal and contraction is not far advanced, effective results can be obtained in many cases by the application of heat—either infrared or diathermy—to the region of the hip joint and to the adductors and flexors of the hip in an attempt to release muscle spasm. Exercises to overcome flexion and adduction contracture are very useful in maintaining proper posture. If this posture can be maintained, the dis-

<sup>1</sup> D. E. Hale, Cleveland, in *Ohio State Med. J.*, April.

<sup>1</sup> S. B. Thompson, Little Rock, in *Chn. Med.*, Oct. March.

ability can be kept at a minimum. Attention to the sleeping and sitting posture is important. The patient must be aided by the use of sand-bags or possibly a posterior molded splint for sleeping to keep the hip in a neutral position. Where the diagnosis is made early and the patient is fully co-operative, relief can be obtained and the patient kept in functional capacity for a good many years by these simple measures applied with careful attention to detail.

In case the pain becomes disabling, or conservative treatment has been ineffective, surgical management of these conditions, is in order, and can be very effective.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### THE IMMEDIATE REPAIR OF CERVICAL LACERATIONS AT CHILDBIRTH

UP TILL 40 YEARS AGO it was standard teaching by gynecologists (the vast majority of them general surgeons) that "if women were properly taken care of during labor the gynecologists would have little to do." We don't hear that now. Why? The answer, simple and plain, is in two parts.

First, 99 per cent of the obstetrics then was done by general practitioners, and general practitioners have always been the scapegoats of medicine. Second, the great majority of obstetrics today is done by specialists in obstetrics and gynecology, and there has been little reduction in the repair work of the gynecologists.

Some months ago, two mothers in adjoining homes in one of the most expensive residential sections of one of our cities, were in hospital for repair of lacerations produced in labor. Just across the street another was preparing to go for the same kind of surgery. Her next-door neighbor had no children! Each of the three mothers had the care, through pregnancy, labor and the puerperium, of an accomplished specialist in obstetrics and gynecology!

The number of hospital admissions for the repair of obstetrical injuries to the soft parts of the female pelvis is high. More effort should be made to prevent these injuries at childbirth or to promptly repair the injury. Already decreasing is the number of cases admitted to hospitals for the repair of cystocele, procidentia and rectocele. This results from general use of episiotomy, refraining from the use of high forceps or manual cervical dilation, and not allowing patients to experience prolonged labor.

One thousand consecutive private patients delivered in three hospitals in various towns were sub-

jected to a careful inspection of the cervix.<sup>1</sup> Universally some cervical injury was noted, 35 per cent torn deeply enough to warrant repair. All cases were repaired where the injury penetrated the cervix for one or more centimeters; 25 per cent had tears of 2 cms. or more and a number had bilateral tears. When the forceps had been used in the midplane of the pelvis or for a forceps rotation there were usually tears. Many deep lacerations occurred in spontaneous deliveries or subsequent to episiotomy in primiparas. Some of the most severe lacerations occurred in premature births and labor before the lower uterine segment and the cervix had become thinned to the state seen in term delivery. Old lacerations, or those from previous confinements, were repaired when feasible.

Alarming bleeding from cervical tears constituted less than 1 per cent, indicating to us that hemorrhage is no criterion of the number of cervical injuries.

Small tears were sutured with continuous fine chromic catgut; larger tears required individual sutures. The cervix was exposed by the use of gelpi and ribbon retractors, the latter often held by a non-sterile attendant grasping the retractors through two thicknesses of sterile drapes. The cervix was grasped with sponge forceps and well exposed by pulling it to the vaginal outlet. Repair was made by holding both sponge forceps in one hand and sewing the edges with the free hand. If any questions of too much or too long an anesthesia existed, a local infiltration of the pudendal nerve area was carried out and all other anesthesia stopped. This proved so successful that it has become our universal practice to infiltrate the pudendal nerve area before delivery takes place and to discontinue all inhalation anesthesia as soon as the baby is born. The cervix can then be inspected and the episiotomy repaired without further danger.

There was no increase of the average three-day hospitalization.

At six weeks postpartum examination, 85 per cent were considered as having benefited by the procedure and an additional 10 per cent responded to minor office procedures. Five per cent were advised to have plastic repair at a later date.

## GYNECOLOGY

RACHEL D. DAVIS, M.D., *Editor*, Kinston, N. C.

### THE USE AND ABUSE OF ESTROGENS

MANKIND, and it seems the medical profession especially, is prone to exaggeration. Any doctor who has kept track of "magical" discoveries in medicine for several decades, and reflects on what

1. E. T. Ellison et al., Little Rock, in *Jl. Ark. Med. Soc.*, Feb.



he has seen, can count off many a boom and collapse.

From the Henry Ford Hospital comes a critical—i.e., an intelligently and honestly evaluated—report<sup>1</sup> on the estrogens. Read and apply its teachings.

Chemically all of the natural estrogens are steroids. Synthetic estrogens are stilbene compounds. The purpose of estrogenic therapy is to substitute for a real or assumed deficiency of estrogens. Primarily the function of estrogens is to promote growth. The growth-promoting effect of estrogens on the vaginal mucosa was utilized several years ago in the treatment of gonorrheal vaginitis in little girls. Antibiotics have now replaced estrogens in the therapy of this disease.

In senile vaginitis the administration of estrogens systemically and locally promotes growth of the vaginal mucosa and facilitates healing of the lesion. Changes in the skin of these labia leading to eczema and kraurosis are not affected by estrogens.

If the estrogens stimulate growth, are they carcinogenic? In certain species and strains the answer is yes for many of the estrogens. A cancer may grow more rapidly in response to estrogens in some instances, whereas in others its growth is retarded temporarily. Whether therapeutic doses can cause a malignant change remains undetermined, but with the large amount of material used daily very few cancers can be attributed to this cause.

It is necessary to consider the relation of ovarian and pituitary secretions (gonadotropins) which stimulate the ovary to secrete estrogens and progesterone. As the amount of estrogens increases, the pituitary gland is inhibited. Although pure estrogens and progesterone are available, pituitary preparations are not.

During pregnancy the mammary gland is developed by the estrogens and progesterone. At parturition these hormones are reduced to a low level and the pituitary secretes lactogenic hormone which initiates lactation. By the administration of estrogens the engorgement of the breasts and lactation may be inhibited. For this purpose diethylstilbestrol in doses of one to 5 mgms. t.i.d. for three days may be used. Any of the other estrogens are equally effective. In this manner the activity of the pituitary gland is diminished.

If the uterus and secondary sex characters have developed amenorrhea is due to an imbalance of the glands. If the uterus is small, the use of estrogens is indicated to see whether that organ will respond. If in a state of poor general health hormone therapy should be reserved until the patient is treated as a whole. In amenorrhea attention to the physical, psychologic and environmental factors is far more fruitful than estrogenic therapy.

1. J. P. Pratt, Detroit, in *Med. An. D. C.*, Jan.

A few patients are benefited by estrogens equivalent to 5 mgms. diethylstilbestrol by mouth daily for 20 days. Withdrawal bleeding may occur in five or six days; may be repeated for three or four months. Progesterone 10 mgms. daily may be added on the 14th day. Functional bleeding does not yield readily to estrogenic therapy. In fact, much of this type of bleeding is due to too much estrogen.

Premenstrual tension is associated with salt and fluid retention. Nervousness, irritability, and headaches are often noted. All of the symptoms including edema disappear promptly with the onset of menstruation. There is no hormonal treatment. Symptoms may be alleviated by restricting the salt and fluid intake; ammonium chloride helps remove the edema. During estrogenic treatment of metastatic carcinoma of the prostate, patients with slight cardiac reserve have shown decompensation because of the increased salt and fluid retention.

Empirical treatment in the menopause by estrogens abets women in the belief that all the ills at this life of life are due to the menopause, giving a false sense of security that the hormones will cure all of their ailments. Valuable time may be lost by self-diagnosis and self-treatment, since the estrogens are available without prescription.

To overlook an organic condition because the slight bleeding is passed off lightly as "due to hormones" may be disastrous. On the other hand, operations have been done needlessly because it has been assumed that the hormonal bleeding was from an organic cause. Inquire whether there has been any previous medication. The patient may be asked to refrain from all medication until possible hormonal stimulation can be excluded.

Probably about 80 per cent of menopausal women experience one or more flushes. *This is the one symptom for which estrogens are useful.* At least 50 per cent of women will be satisfactorily relieved by the use of phenobarbital,  $\frac{1}{4}$  gr. t.i.d., average. In case this does not relieve, stilbestrol may be added or used separately. The smallest effective dose should be used—less than one mgm. a day is desirable. Oral medication is always preferable. Little difference in estrogens in effectiveness or tolerance.

Emotional factors play an important role in the symptoms attributed to the menopause; most of them due to fear of something. Time given to a sympathetic understanding of all the patient's problems is well spent.

HEADACHES—There are many instances in which treatment has to be symptomatic. Aspirin is still the most generally useful analgesic, alone, or combined with phenacetin and caffeine, or with codeine—occasionally with cascara to counteract its constipating effect; generally a separate laxative will be required.

—J. P. Martin, in *Brit. Med. J.*, April 1st.

# HISTORIC MEDICINE

## EXTRACTS OF INTEREST FROM "HISTORY OF THE MISSOURI MEDICAL ASSOCIATION"

(R. E. Schlueter, St. Louis, in *Jl. Mo. Med. Assn.*, April)

WHILE attending the annual convention of the A. M. A. in Cincinnati in 1850, the several delegates from Missouri learned that there existed "associations embracing the medical profession" in many States. Deciding then to create such an organization, one of these delegates, W. M. McPheeters, took the lead in a movement to unite the medical profession of Missouri.

An invitation having been addressed to the members of the regular medical profession of Missouri to meet in St. Louis November 4th, a large delegation met at noon of that day in the First Presbyterian Church; delegates registered were 98 from St. Louis and 38 from other localities.

Among the many resolutions and motions adopted were those pertaining to the passage of a good medical practice act, "establishing a uniform system of registration of births, marriages and deaths," recommending the control of the dispensing of impure drugs and "a competent inspector of drugs and medicines for the Port of St. Louis," and recommending a liberal preliminary education of those who enter the study of medicine, and the education of the blind and deaf.

In the 1852 meeting Adam Hammer read a prepared paper on "Medical Education," which "gave rise to an animated discussion which lasted until the hour of adjournment."

In 1853. The members went in a body to the Missouri Institution for the Education of Blind. It was decided to invite the A. M. A. to hold its 1854 session in St. Louis.

No records are available for the years 1857 to 1866 and it is highly improbable that meetings were held in these years.

In 1868. E. Montgomery, chairman of the Committee on Arrangements, delivered his address of welcome of more than 3,000 words. J. T. Hodgen demonstrated his splint for fractures of the thigh, leg and arm. Most of the time was consumed in discussing local medical education, there being three medical schools in St. Louis—The Missouri Medical College, The St. Louis Medical College and The Humboldt Medical College.

In 1869. A memorial to the A. M. A. asking for "a rigid code of ethics for the schools, such as it has done for the general profession."

In 1872. Hugh Trevor, president of the St. Jo

seph Medical Society, "delivered a graceful and hearty address of welcome." The Hannibal and St. Joseph and the Kansas City, St. Joseph & Council Bluffs railroads agreed to issue excursion tickets or to furnish return tickets at *one-fifth* the usual rate of fare. Among the papers read was one entitled, "Psychological Medicine," another entitled "Tranquillization as an Element of Cure."

In 1873. The meeting was called to order by the Vice-President, S. S. Todd, Kansas City. The President, E. Montgomery, was prevented from attending the meeting by "imperative professional engagements." The chairman of the Committee on Arrangements announced that the committee had rented the hall in which they were meeting for three days at \$10 a day.

At the morning session of the second day the treasurer was instructed to secure 50 copies of each of the two morning papers for use in the meeting hall. The minutes fail to state why this was done or how these papers were to be used.

In 1874. In the absence of the President, S. S. Todd, the second Vice-President, W. O. Torrey, Hannibal, presided. The Committee on Medical Education presented a lengthy report, contained nothing definite or important. A long resolution for the control of quackery, like most of its kind, was impractical and wisely failed of adoption. A resolution urging the regular physicians of every county to organize a medical society was adopted, as was another resolution that no physician should be compelled by the courts to testify as an expert without being allowed a proper fee.

In 1875. the President being absent, the meeting was called to order by the Second Vice-President. Repair of lacerated perineum and the employment of anesthetics in obstetrics were discussed at length. Laryngeal diphtheria and tracheotomy were discussed throughout most of two separate sessions.

In 1876. Some action was taken on sanitation in the state and on medical education and licensure. The autopsy on the late Governor Trustin Polk was presented and discussed, as were quite a number of scientific subjects.

In 1877. There were 11 formal papers; one on "Syphilitic Phthisis," and one on "Summer Complaints of Children."

In 1878. In the absence of the President, the Vice-President called to order. The feature of this meeting was the report which considered all offerings of the 10 medical schools of the state and recommended only four as "representative of legitimate medicine in the state."

In 1880. The President's address, of about 4,000 words, was entitled "Medical Ultraism." It was an interesting oration and characteristic of the man. No abstract can do justice to it; it must be read.

In 1882. The President's address was on "Quacks and Quackery in Missouri." It has a length of 33 octavo printed pages. P. V. Schenck described an ingenious contraption, of his devising, for taking vaginal injections, which consisted of pipes fastened to both the hot and cold water-supply plumbing. The flow could be regulated by valves, there being a pressure gauge, and medicine could be added from a glass receptacle which was attached to a larger tube before the mixture reached the rubber hose leading to a vaginal tip.

In 1883. A resolution praising the Library of the Surgeon-General's Office at Washington and advocating adequate financial support was adopted. A resolution declared the term "allopath" derogatory to the profession. A motion thanking the State Legislature for passing "the law enacting a State Board of Health" was carried.

In 1886. The Association met in Entertainment Hall of the Exposition Building; the hall being too dark, the Association transferred to the vestry of the First Presbyterian Church.

In 1887. Macon City, C. A. Todd reported as chairman of the special committee that a satisfactory Anatomy Act had been enacted. This act is still in force and has been eminently satisfactory.

In 1889. Among the papers was the first one of many on appendicitis. The General Assembly was memorialized by the appointment of a committee to "take action toward the perpetuation of the State Board of Health."

In 1890. The Committee on Credentials had more than its customary share of trouble at this meeting. This was due to the many small medical societies which were organized by rival groups in some localities.

In 1891. Balance of \$10.82 in the treasury.

In 1894. The President, W. H. Evans, called the meeting to order in the Gasconade\* Hotel, Lebanon, on May 15th. A resolution advocating the establishment of a state institution for the feeble-minded was passed.

In 1895. The action of the Governor in vetoing the "Osteopathic Bill" was approved. A legislative act for the prevention of blindness in infants was endorsed. Balance of \$5.58 in the treasury.

In 1896. A motion to memorialize the Legislature for an appropriation to enable the Bacterial Department of the State University to manufacture diphtheria antitoxin and antitetanic serum and furnish it to physicians at cost was adopted.

In 1897. The question of acceptance of the credentials of members finally was decided that those who have no credentials from local societies, but

who are vouched for by some members, should be seated as members.

In 1898. "State Medicine by common consent is defined to be all those agencies which lead toward giving the people an educated profession, and such instructions in the laws of hygiene as will increase the health and vigor of the citizens." Thus began a paper by J. M. Allen, Liberty. One adopted resolution was "to have lectures on state medicine delivered before the County Institutes of each county and before the State Teachers Institute. Still another requested the "homeopathic and eclectic schools of medicine to join us in getting an educated medical profession."

In 1900. Emory Lanphear read a paper entitled, "Should the Specialist Pay a Commission to the General Practitioner?" Lanphear advocated this practice.

In 1901. Governor Alexander M. Dockery, who had been a practicing physician and a member of the Association, delivered the address of welcome. There was a reception at the Governor's Mansion on Wednesday evening. There were too many papers on the program; 16 were read by title and referred to the Publication Committee.

In 1902. The Recording Secretary made a lengthy report on the reorganization plan of the A. M. A.

In 1904. A splendid symposium on "Appendicitis."

In 1905. Resolution asking school boards to appoint medical examiners for the school children and advocating the establishment of a state sanitarium for consumptives.

In 1911. Among the papers was one by Greenfield Sluder, of St. Louis, on "Tonsillectomy." In it the author described his operation which became the method of choice by many otolaryngologists for several decades.

In 1912. Address of welcome, to which W. G. Moore responded with a speech of eloquent brevity.

In 1913. House of Delegates passed a resolution on contract practice and one on fee-splitting.

In 1914. House of Delegates was empowered to elect the President. The members of the Jasper County Medical Society presented George Bernard Shaw's "The Doctor's Dilemma."

In 1915. After being elected President, C. R. Woodson rose at the General Sessions and said: "My attention has been called to the fact that there is an objection to a one-line advertisement that I have in the paper, 'Dr. Woodson, Nervous and Mental Diseases, 220 N. 7th.' If this card is objectionable to any individual member of this society I will cheerfully and willingly take it out!"

\*Since gasconade means "boastful behavior," it seems strange that one would give his hotel this name.



—referred to the Judicial Council. The Council met 9 days later, 13 Councillors present, and decided unfavorably to Dr. Woodson. He then entered a petition for a writ of mandamus to the Circuit Court against the Association and each of the 29 Councillors individually, charging the lack of a quorum. The Judicial Council met again 3 weeks later, with a quorum of 25, and exonerated Dr. Woodson.

In 1923. The Committee on Constitution and By-Laws was instructed to suggest plans for the electing of the President so that it will be possible for every member to have a voice in the election. A resolution protesting against the training of World War I Veterans in chiropractic was passed. The four-year course at the medical school of the Missouri University and a State General Hospital were again urged.

In 1925. A resolution that the physicians of the State want the eleemosynary institutions kept entirely free from political exploitation was introduced and approved.

In 1927. The creation of a State Commission of Alienists to pass on all expert testimony in criminal cases was urged. A state hospital for crippled children was recommended.

In 1938. Appointment of Committees on Conservation of Eyesight, on Automobile Accidents and on Rural Medicine was approved. Resolutions were passed regarding introduction in the State Legislature of bills on basic science law, antenuptial examinations, integration of the medical profession and the restriction of the use of harmful drugs. The inclusion of accredited courses in anatomy and physiology in the public schools was recommended.

In 1947. A resolution to create a Section on Gynecology and Obstetrics failed of adoption.

In 1948. Resolutions of thanks to U. S. Senators Forrest C. Donnell and James P. Kem were adopted.

In 1949. The report of the Committee on Rural Medical Practice revealed its excellent work in introducing interns and residents to rural practice.

## PEDIATRICS

ALBERT M. EDMONDS, M.D., *Editor*, Richmond, Va.

### STREPTOMYCIN, AUREOMYCIN, CHLOROMYCETIN IN PEDIATRIC PRACTICE

Most of what Garber<sup>1</sup> has to say on the usefulness of these remedies in the treatment of sick children applies as well to adults.

Streptomycin is effective against a wide range of organisms and in many instances organisms rapidly become resistant to the drug. Adequate blood levels develop in most of the body fluids within

<sup>1</sup> M. D. Garber, Rochester, N. Y., in *Jl. Indiana Med. Assn.*, Feb.

two hours after intramuscular injection. In the normal subject it is not found in the cerebral spinal fluid, but in meningitis, other than tuberculous, adequate levels develop after repeated intramuscular injections.

When treatment is not prolonged beyond two weeks, toxic reactions have not been serious—in Keefer's 1,000 cases in 20 per cent.

More common reactions were:

Local at site of injection, tingling and paresthesia.

Headache, flushing of the skin, nausea, vomiting and fall in b. p.

Sensitization: skin eruptions, fever.

Neurological: vertigo, tinnitus, deafness.

Miscellaneous: diarrhea, albuminuria, casts, purpura, hemorrhagia, and arthralgia.

Reduction of dosage markedly reduced toxic reactions without a similar reduction in therapeutic efficiency in tuberculosis. Also the *dihydrostreptomycin* is reportedly freer of toxic manifestations without any loss of therapeutic efficiency.

In pediatric practice streptomycin has become of utmost importance in the treatment of meningitis due to *H. influenzae* type B, chronic bacillary urinary tract infections, pertussis, tuberculous meningitis, and certain other bacteremias and chronic pulmonary infections not responding to penicillin and or sulfonamides.

*Aureomycin* activity varies markedly against different species of organisms and different strains of the same organism: more active against cocci than against Gram-negative bacilli but it is highly active against *Hemophilus*. Active against all known available Rickettsias and viruses of the psittacosis-lymphogranuloma venereum group.

There are no reports resistant strain or organisms following therapy.

Dose 40 to 50 mgm. by mouth per kilogram of body weight daily. No serious toxic manifestations reported. Irritation about the site of IM injections, and after oral administration, nausea, vomiting or diarrhea frequent.

Primary atypical pneumonia responds well to aureomycin, the first agent that has offered any aid in the therapy of this condition.

In tick-bite fever average check of fever in 2.3 days, and clearing of the rash in 4 to 5 days.

Acute brucellosis responds promptly to 4 to 5 grams daily for two weeks.

Moderate severe pyoderma in the newborn cleared promptly without any other therapy, and in no instance were there any gastrointestinal symptoms attributable to the drug.

Bacterial conjunctivitis and dendritic keratitis have responded well to a 0.5 per cent solution instilled into the eye.

*Aureomycin*, like streptomycin, beneficial in tu-

laremia without the toxicity of streptomycin therapy. All cases of amebiasis responded well to aureomycin.

*Chloromycetin* is of greatest usefulness in the rickettsial and Gram-negative infections, particularly those due to *Brucellae*, and *Salmonella* and coliform group. Like aureomycin, it is readily absorbed from the gastrointestinal tract. In contrast to aureomycin, it may be administered intramuscularly without reaction at the site of injection. No serious side effects have been observed.

In typhoid it is more beneficial than aureomycin. In 21 cases the usual complications were not obviated. There were two instances of intestinal hemorrhage and one of intestinal perforation while the patient was still under treatment.

Clinical benefit was obtained in the *Proteus* and pyocyanous infections of the urinary tract. In several instances sulfonamides streptomycin and aureomycin had failed to eradicate such infections, or these organisms had appeared after the clearing of the original bacilluria. Following initiation of therapy with chloromycetin, the *proteus* group and to a lesser extent the pyocyanous group, have been sterilized and have so remained.

## INFECTIONS OF THE NEWBORN AND PREMATURE INFANT

ACCORDING to a Boston specialist:<sup>1</sup>

One physician should be made responsible for the premature nursery service of the hospital.

Premature nurseries in obstetric hospitals should not admit patients delivered outside.

Premature nurseries in pediatric hospitals should encourage referring hospitals and physicians to send their infants in as soon after birth as possible. No infant older than seven days of age, and no infant with an infection should be admitted to the premature nursery, unless equipment providing effective individual isolation is available.

The premature nursery should be located as far away from the hospital area caring for sick infants as possible.

The premature nursery should be constructed with as many barriers between it and the rest of the hospital as is practicable. Entrance to the nursery should be gained through an anteroom.

The medical and nursing staff, while caring for premature infants, should be relieved of all duties involving the care of sick patients.

Every infant should ideally be kept in his own completely enclosed and air-conditioned unit from admission to discharge.

All formulas should be terminally sterilized by either the flowing-steam or steam-under-pressure method.

In premature nurseries outside obstetric hospitals

1. S. H. Clifford, Boston, in *Penn. Med. J.*, Jan.

all admissions, with the possible exception of healthy newborns, should be given a prophylactic course of penicillin and sulfadiazine.

All which admits of only one interpretation; viz.—The average home is the safest place for the newborn infant, whether or not it come into the world prematurely.

## IMMUNIZATION IN EARLY CHILDHOOD

(L. W. Sauer, Evanston, in *Ill. Med. J.*, Feb.)

Simultaneous active immunization against diphtheria, tetanus and pertussis is effective. Three monthly doses of alum-precipitated DTP are preferred. Best age for the initial dose is the sixth month of life. It should not be begun before the third or fourth month of life, and four monthly doses are recommended. A booster dose of alum-precipitated DTP is recommended before nursery school attendance, before school attendance, and after presumed exposure of the previously immunized. Smallpox vaccination should not be performed until completion of basic immunization against diphtheria, tetanus and pertussis. Immunizations against scarlet fever, typhoid fever and tick fever should be performed when specially indicated.

## SCARLET SUBACUTE BACTERIAL ENDOCARDITIS STILL FATAL

(H. S. Dreher, Jr., in *Jour. Kans. Med. Soc.*, March)

The successful treatment of subacute bacterial endocarditis with penicillin in recent years is well known. Fortunately, most infections are caused by penicillin-sensitive species of streptococci, particularly *Streptococcus viridans*. Although the recovery rate from this disease is now reported to be 60 to 80 per cent by various investigators, there remains an important group of patients in whom the disease still is fatal.

The causative agent in many of these penicillin-resistant infections is the *Streptococcus fecalis*, or enterococcus. Only recently have there been a few reports of recovery from subacute bacterial endocarditis due to *Str. fecalis*; most of these patients have necessarily been treated with massive doses of penicillin for prolonged periods, some in conjunction with one or more courses of streptomycin.

UNDESCENDED TESTES.—As spontaneous descent occurs in so many cases, this possibility should be considered in weighing indications for operation on boys before the age of puberty. Coexisting hernia (59 per cent in this series) is an indication for early operation. Otherwise (orchipexy may be best delayed, perhaps until the twelfth year.

—W. H. Snyder, Los Angeles, in *Calif. Med.*, April.

## AUREOMYCIN YIELDS GOOD RESULTS AGAINST INFESTATION

(*Jour. A. M. A.*)

Chronic infestation by the parasite that causes amebic dysentery is relieved by aureomycin, the new antibiotic drug, according to an article in the current *Journal A. M. A.* Twenty-seven of a group of 38 patients treated with aureomycin were cured, says Dr. John Davis Hughes of the University of Tennessee College of Medicine, Memphis. Practically all others of the group had great relief from symptoms of the disease.

All 38 patients had been treated repeatedly for the disease with other drugs which failed to achieve satisfactory results.

A great many persons in this country are infested with the parasite. Although some carriers have fatigue, nervousness and recurring diarrhea, others show no symptoms. However, carriers of the parasite are a considerable source of danger to other persons because of possible spread of amebic dysentery.





## PRESIDENT DAVIS

THE benign countenance that looks at you from the opposite page is that of no common doctor, no common man.

Richard Boyd Davis was born at Warren Plains, N. C., September 1st, 1892, the son of William J. Davis and Hannah Barham Davis. His general education was obtained at Warrenton High School and Catawba College, and he received the M.D. degree from the Medical College of Virginia in 1915. In 1925 he was awarded the degree of Master Medical Science in Surgery by the University of Pennsylvania.

In addition to membership in the Medical Society of the State of North Carolina since soon after graduation, and a number of offices in this Society, including that of Chairman of its Committee on Medical Education, Dr. Davis' other professional attainments include:

Member of the Board of Health of Pasquotank County 1919-20

President of Pacquotank-Camden-Dare Counties Medical Society 1921

Member American College of Surgeons since 1926

Secretary Medical Arts Club, Greensboro, 1928 to 1933

Chairman First Aid Department, American Red Cross, Greensboro Chapter, 1929-1941

Member American Legion and Veterans of Foreign Wars

Member Credentials Committee, N. C. Section, American College of Surgeons

Secretary N. C. Sectional Department American College of Surgeons Executive Board since 1937

Member Tri-State Medical Association since 1927 (offices held many)

Member American Medical Editors' and Authors' Association

Member Guilford County Medical Society

Member Greensboro Academy of Medicine

Member North Carolina Academy of Surgeons

Member North Carolina Hospital Association

Before studying medicine young Davis served in the N. C. State Militia 1906-1908, attaining the rank of Sergeant

First Lt. U. S. Army Medical Corps 1918-19 (overseas)

Capt. U. S. Army Medical Corps 1918-19 (overseas)

Member Executives Club

Editor of the Hospital Section of *Southern Medicine & Surgery*

Past president Greensboro Council of Social Agencies

Former member Greensboro Community Chest

Member Medical Advisory Board Elizabeth City Hospital 1920-22

Superintendent and assistant surgeon Wesley Long Hospital, Greensboro, 1925-27

Councillor Eighth District (N. C.) Medical Society 1928-31

President State Hospital Association 1932-33

Former chief of surgical staff of Wesley Long Hospital and of L. Richardson Memorial Hospital, Greensboro.

Dr. Davis has been secretary of the Board of Directors of Piedmont General Hospital, Greensboro, since 1934, and for many years has been chief of the surgical staff.

Last year, as president-elect, Dr. Davis devoted his great energies to the promotion of the cause of the Tri-State Medical Association in the way of arranging an instructive meeting, and his efforts were crowned with notable success. In previous years, particularly when the Association was holding its meeting in his City of Greensboro, Dr. Davis has been untiring in his exertions for the common good, and these exertions have never failed of fruitful result.

All of us who know him are fully assured that his zeal in the Association's cause will be at full heat throughout the year of his presidency, and that there will be no abatement thereafter.

In whatever cause this good doctor enlists it is "for the duration." In civic affairs and in church and charitable organizations, as well as in bodies specially concerned with medical and hospital services, he has been zealous, earnest, and unremitting in pouring out his full measure of devotion.

Let each one of us extend himself in this year, that we may have the best attended meeting in Tri-State history, that this doctor who shows his faith by his works may feel that his zeal in the cause is recognized and appreciated, and that our unique organization of doctors will go on to ever greater and greater triumphs in the warfare on disease and sorrow and death.

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Offers for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage.

As is true of most Medical Journals, all costs of cuts, must be borne by the author.

EFFECTIVENESS AND COST OF TREATMENT OF DIARRHEA IN INFANCY  
HOME vs. HOSPITAL

CONTRARY to the general impression a high-calorie diet can be given to infants suffering from diarrhea without aggravating the local intestinal condition. While it is good practice to spare a diseased organ, in diarrhea, the whole intestinal tract is not affected. The affected part is the lining mucous membrane of the intestines and not the tissues concerned with the absorption of the food elements.

Owing to the multiple etiological factors in diarrhea, and to the difficulty of identifying these factors, an efficient non-specific form of therapy is desirable. Unless the sulfonamides or antibiotics of the future are more effective than is the case today, diet will continue to be of paramount importance in this condition.

Reading thus far an article by a teacher of pediatrics<sup>1</sup> the editor was so impressed that the whole was digested for the readers of this journal.

The intravenous therapy so commonly practiced in the diarrhea of infancy supplies adequate fluid intake, the optimum of salts is still under discussion. Some effort is made to meet the calorie requirements of the infant by the addition of glucose. Blood, plasma and amino acids led up to a rather lame substitute for the natural selection of foods and minerals normally made by the infant's intestinal tract. The current handling of these cases deprives of the protein from which antibodies are formed.

I use a diet of apple powder (appella), boiled whole milk or evaporated milk and water in equal parts, one of the prepared barley or wheat cereals, one of the strained meat products, preferably beef, and a multivitamin preparation. The fat content is not reduced, the sugars are replaced by an equivalent of starch. The usual four-hour feeding interval is reduced to three hours, in order to increase the calorie intake.

Charts show the weight curves of two groups of infants on a minimal or starvation diet, and one group on a high-calorie diet. The weight gain in infancy is the best single criterion of the progress of an infant, either in sickness or in health.

The next five paragraphs are verbatim. This is stated lest readers, who know the editor's fixed idea that most all sick folks are better off in their homes than in hospitals, attribute the wording to the editor.

1. E. S. O'Keefe, M.D., Lynn, Mass., Pediatrician, Union Hospital, Lynn; Consultant Pediatrician, J. B. Thomas Hospital, Peabody; Formerly Pediatrician, Massachusetts General and Carney Hospitals, Boston; Formerly Instructor in Pediatrics, Harvard Medical School, in *Rhode Island Med. J.*, March.

Chart I represents the work of several professors, assistants, residents, internes, social workers, hospital executives, laboratory technicians and a large corps of nurses, ward maids, medical students and by-standers. The work had the approval of a board of hospital trustees, all eminent citizens, selected owing to their ability to raise or to leave money for the benefit of the hospital.

Unfortunately for the patients and their parents none of the participants in this opus had ever practiced medicine outside of a hospital. Many chemical analyses, bacterial studies and other laboratory procedures added to the confusion and to the expense—considerable, in view of the very modest end result of all this effort. When the smoke cleared away this formidable group knew all about every part of the child, but as the chart shows, they didn't know much about the child.

The infants treated in Hospital A spent 350 days in the hospital at \$10.00 a day. So you can see that to assemble this armada of workers about this group of sick infants cost \$3,500.00, the net gain for the group was five ounces, cost per oz. of gain \$700.00!

Chart II is also a hospital group. Some intravenous therapy was used but the oral method was predominant. The feeding was minimal. The calorie intake was below the requirements of a well infant and far below the requirements in diarrhea. The net gain for this series was  $3\frac{1}{2}$  ozs. The cost of care for the whole group was \$2,415.00, cost per oz. of gain \$690.00!

Chart III represents what was done in private practice by one physician without assistants, hospitalization or complicated laboratory procedures. The feeding was exclusively oral. The net gain was amazing, 351 ozs.—70 times that of the first, and 100 times that of the second hospital group! The cost of care for this group was \$660.00, which includes the physician's fees and an allowance of \$10.00 per week for food and medicines. The cost per oz. of gain was \$1.90! When this figure is compared with the hospital costs of \$700.00 and \$690.00 per oz., the question arises as to how long the hospitals can stand competition of this sort.

Each of the hospital series is composed of cases within the hospital walls during an epidemic of diarrhea. Each series was entirely unselected. This is mentioned to remove any impression that the hospital the two series were composed of *difficult* cases received from private physicians. Each series represents all shades of severity; each series is composed of unselected cases. Likewise, the cases from private practice were unselected, "run of the mine" cases.

## GAS-BACILLUS INFECTION STILL HAS HIGH MORTALITY RATE

SOMEHOW I had got the impression that some of the new drugs had brought the death rate in gas-bacillus infection very low. Experience of this infection in Hospital Center Kerhuon, in World War I, and a doctor friend losing his lovely wife from this cause some 20 years ago had fixed the deadliness of gas-bacillus infection in my mind.

It appears from a paper by Wood<sup>1</sup> and the discussion that we must still be ever alert to its prevention, its detection and vigorous at the earliest possible moment.

Gas-bacillus infection is caused by any one of at least a dozen strains of related organisms, the most common of which is *Cl. Welchii*. These organisms are widely distributed in soil, animal excreta, and the intestinal tract of man and animals. Since they are so prevalent, they frequently contaminate wounds, but only under conditions optimal for their growth and development do they cause actual infection. They are anaerobic, and so will not grow in the presence of air, and they require dead or devitalized tissue, particularly skeletal muscle, as a culture medium.

Gas-bacillus infection is most to be feared in penetrating puncture wounds, or in lacerated wounds which have been closed, preventing access of air; also in crushing injuries with extensive muscle damage, tearing or contusion. Circulatory impairment from hematoma, edema, constricting bandages or casts, or arteriosclerosis, or infection by common pathogenic organisms, such as staph, or strep, may also devitalize muscle sufficiently for the gas-bacillus organisms to invade it.

In most cases the diagnosis is obvious 24 to 36 hours after injury. Locally the first indication is pain with extreme tenderness; this may seem an abnormally severe or prolonged reaction from the trauma, or it may develop so suddenly as to simulate embolism. There is great swelling of the part, which is brawny and tight, not soft and edematous. There may be brownish or dusky skin discoloration, sometimes discernible only in a strong light. The wound is apt to look unhealthy, its edges gaping or sloughing. There may be a serous discharge having a foul or mousy color. Palpation usually will elicit fine crepitation (may be obscured by the tight swelling). The disease spreads rapidly. The patients look and are extremely sick. They are nervous, apprehensive, and irritable, or delirious, lethargic and comatose.

The t. may be normal or extremely high, usually around 102°; pulse rapid out of all proportion to the fever. Leukocytosis 12,000 to 15,000, mostly

1. C. F. Wood, Louisville, in *Ky. Med. J.*, April.



young polys. While it may not be evident early, severe progressive anemia is to be expected, again due at least in part to hemolytic toxins produced by the causative organisms. The mortality rate is 25 to 50 per cent; death may be rapid from overwhelming toxemia and circulatory collapse.

Meticulous skin preparation and careful draping (especially in wounds of the buttocks and lower extremity) should be used for treatment of even minor lacerations. Scrub as carefully as for an elective operation; always wear sterile gloves. Antiseptics should never be poured into or swabbed around the wounds. They will cause tissue necrosis before they will kill bacteria, especially spores.

No wound should be closed unless one is sure that all contamination has been removed, no devitalized tissue in it upon which the organisms may grow. Thorough surgical exploration and debridement of the wound should be carried out as soon as possible. If there is any doubt, the wound should be left open, never packed open.

Then the injured part should be put at rest and elevated. Ice bags help prevent swelling. Dressings, splints or casts should never be tight enough to cause constriction or impairment of circulation. Frequent inspection is necessary and, if swelling occurs, dressings must be loosened, casts split.

Trivalent antiserum, combined with tetanus antitoxin, is given routinely. Penicillin is started at once, continued at least 5 days. X-ray therapy also is believed to have value.

Immediate surgical intervention is most important. In severe cases amputation well above any evidence of infection, always of the guillotine type.

Antitoxin is usually given and will continue to be, until it is shown to be useless or contraindicated; the initial dose of 30,000 units of trivalent serum *IV* after testing for sensitivity; repeated in two or three hours, and further *IV* or *IM*, p.r.n.

Intensive chemotherapy, especially with penicillin, locally and systemically, is not curative, but does tend to prevent spread of the infection and septicemia.

A participant in the discussion said antitoxin should be administered in large amounts so the full dose can be given in a few hours rather than spaced over a day or two; and that of the sulfa drugs sulfadiazine is the most efficacious, but none help in the cases due to *Cl. novyi*.

### THE SCORPION PROBLEM

ALL MY LIFE I have heard conflicting reports on the dangerousness of scorpions—some that the sting was deadly, others that it was but a trifling thing. A good many will be interested in learning what an Arizona State College official<sup>1</sup> has to say.

The only two scorpion species known to produce

a lethal venom are *Centruroides sculpturatus*, Ewing; and *C. gertschi*, Stahnke.

Deaths from venomous animals in Arizona from 1929 through 1948—

Scorpions 64; rattlesnake 15; black widow 3; gila monster 1; spider 4; insect 5; bee 1; centipede 1—total 94.

A curious fact is that in spite of deaths having occurred from January through August, and eight in October, for the 20-year period, there have been no such deaths in the month of September. Scorpions are very active during this month and people are stung. Why, then, for a 20-year period should no deaths have occurred?

This laboratory has developed an effective rabbit antiscorpion serum but due to the lack of a suitable animal house and a shortage of scorpions, manufacture of the serum could not be realized. Scorpions could be obtained in adequate numbers if they could be sent alive through the mails. The present mailing law makes it illegal. A bill has been introduced making it permissible to mail scorpions. All our representatives in Congress have supported the bill, but, because of the opposition by the Postmaster General, the bill still lies in committee although it has been shown that scorpions could be mailed without danger to postal personnel.

To date, the most successful treatment of persons stung by scorpions in Arizona has been localization of the venom and sedation. When the sting has been on one of the extremities immediate use of a tight tourniquet followed by cryotherapy—crushed ice in water or ethyl chloride. After five minutes of cryotherapy the tourniquet is removed but the hand (or foot) is left in the iced water for two hours. Where the treatment has been properly and promptly instituted untoward effects very seldom develop.

Sedation should be resorted to only after the convulsive state has been reached. Sodium pentothal, sodium phenobarbital, etc., *IV*, in quantities large enough to produce complete relaxation, have been used with high success. An infant may require as much as five grains before adequate sedation is realized.

1. H. L. Stahnke, Ph.D., Arizona State College, Tempe, in *Arizona Med.*, (March)

### ON DEPRESSION, ITS RECOGNITION AND MANAGEMENT

THE PHYSICIAN may not be in the habit of making any systematic enquiry into a patient's emotional state and personality problems; he may feel that such enquiry is an intrusion on the patient's privacy and he may therefore not like to make it.

So a learned Scot<sup>1</sup> shows his understanding of

1. T. A. Munro, in *Edinburgh Med. J.*, Nov.

two of the reasons why doctors may not properly evaluate personality problems.

Patients stress their *bodily complaints* because they believe they *are* their illness, or because they think a doctor is not interested in *feelings*. Sometimes the feelings are so grim that the patient dreads to mention them.

After the bodily complaints have been investigated, if the patient is asked how he feels about life in general and in his spirits in particular, he will talk of his real problems. A dominating sadness, a loss of feeling, a loss of activity, suicidal thoughts, early morning awakening and a morning-evening variation in severity makes the diagnosis plain.

In a sense all depressions are reactive. It is easy to see the reparative nature of many depressions, and a patient after a depression may be for years in better mental health than ever before.

In the case of any mental disorder, major or minor, it is often helpful and time-saving to get a history of the illness from relatives before one sees the patients. Always interview members of the family. Just what the patient did and said from the time of waking through the day and night will go far to elicit the facts.

It is important to note the attitude of the relatives to the patient's illness.

Be insistent in enquiry as to the patient's threats of suicide. Do not be misled by: "He does not really mean it; he just talks silly at times."

Information on activities and enthusiasms in work, home, hobbies and recreation will enable the physician to assess what assets and resources the patient has to fall back on in his illness. The mental health of the family should also be enquired into.

The patient should be examined alone; he is likely to talk more freely of his troubles in private. The record need not be lengthy. The ability to recall quickly the main points about a patient's life, the exact nature of his job, the names and ages of his children, tend to increase confidence in the physician.

Complaints should be recorded in the patient's own words.

First examine physically. By this time the patient will have gained confidence so that a more detailed inquiry into his worries, fears, preoccupations or topics of concern can profitably be taken up.

The first step towards diagnosis of morbid depression is to remember the possibility of the disease. The diagnosis is easy once delusions have appeared. Mild depressions present more difficulty. Given a syndrome of fatigue, loss of weight, sleeplessness and some emotional disturbances, it is imperative to think seriously of insidious organic disease.

## WRITE AUTHOR A CARD REQUESTING A REPRINT:

"Treatment of Friedlander's Pneumonia with Streptomycin," in *Jour. Indiana Med. Assn.* (Sept., '49). Author—Dr. Ralph U. Leser, Methodist Hospital, Indianapolis.

"A Low-Sodium Diet for Hypertensive Disease Precipitating Addison's Disease and Miliary Tuberculosis," in *N. E. Jour. of Med.* (Feb. 25th). Author—Dr. Sidney Freidenberg, 2990 Alabama Road, Camden, N. J.

"The Injudicious Use of Nasal Medication," in *New Orleans, M. & S. Jour.* (Feb.) Author—Dr. A. J. McComiskey, 3420 Prytania St., New Orleans.

"Amebiasis," in *Illinois Med. Jl.* (Mch.) Author—Dr. J. Arnold Borgen, Mayo Clinic, Rochester, Minn.

"A New Treatment of Depressive Psychoses (Ether by Vein)," in *Jour. Nerv. & Mental Dis.* (Apr.) Author—Dr. A. Ferraro, Manhattan State Hospital, Ward's Island, N. Y.

"Feeding of Healthy Infants," in *Jl. Iowa Med. Soc.* (Apr.) Author—Dr. R. L. Jackson, College of Medicine, Univ. of Iowa, Iowa City.

"Infant Feeding in Acute Illness," ditto—Author—Dr. R. R. Rembolt, ditto.

"Clinical Potassium Problems," in *Calif. Med.* (Mch.) Author—Dr. Helen E. Martin, U. S. C. School of Medicine, Los Angeles.

"Clinical Potassium Problems," in *Calif. Med.* (Mch.) Author—Dr. R. R. Rembolt, ditto.

## TRUST NO COLORED MOLE OR WART

(F. D. Weidman, Philadelphia, in *Rocky Mtn. Md. Jl.*, Mar.)

A mole may appear as an irregularly outlined pigmented patch, flat at some places and variously thickened at others, color pale brown to blue-black. A lesion such as this may exist for years before malignant melanoma develops.

The onset of malignancy is signaled when some portion of the lesion proliferates. This is likely to proceed rapidly and terminate in ulceration. *The proliferative parts need not be pigmented, this signifies anaplasia of the cells which is a bad omen indeed.* Early metastasis to regional lymph nodes, and the multitudinous metastases to viscera and skin through the blood, is to be expected.

*One of these blue-black lesions on an area subject to irritation should be excised widely at once.* Under no circumstances should it be rubbed or even palpated firmly by the physician. X-radiation and radium therapy are useless. In the case of lesions which are not subject to undue irritation, each case must be judged individually; preferably, the opinion of a consultant or a tumor board in a hospital should be secured. If excision is decided upon, it should be practiced widely, meaning a margin of an inch if the anatomic circumstances permit.

The physician should be alert to the sinister possibilities of reddish-brown lesions in the nail bed. The outlook is favorable in case there is exquisite pain, because glomus tumor (a benign vascular lesion) is painful. Time and again, such lesions are malignant melanomas in the making (melanotic whitlow.)

## NEWS

### UNIVERSITY OF VIRGINIA, DEPARTMENT OF MEDICINE, CHARLOTTESVILLE

Recent visiting lecturers and their subjects:

Dr. John P. Peters, Yale University: "The Incidence and Correction of Some Electrolyte Disturbances in Clinical Medicine."

Dr. Herbert M. Evans, University of California: "Unsolved Problems in Anterior Pituitary Physiology."

Dr. Merrill C. Sosman, Professor of Radiology, Harvard Medical School, was guest speaker at the annual lecture and banquet of the University of Virginia Chapter of Alpha Omega Alpha on March 27th. Dr. Sosman spoke on the subject, "Pituitary Tumors as seen by the Roentgenologist."

The following were elected to membership in A. O. A.: From the Faculty: Dr. Chalmers L. Gemmill, Professor of Pharmacology.

From the Alumni: Dr. Charles S. Venable, Dr. Frank W. Foote.

From the Students: Frank Bilisoly, John C. Buchanan, Charles H. Sackett, William P. Wharton.

The annual meeting of the Virginia Chapter of the American College of Chest Physicians was held here March 30th. The following program was presented:

"Tuberculosis of the Larynx"—Dr. George Ewart and Dr. George Welchons, Richmond.

"Pulmonary Lesions Simulating Tuberculosis"—Dr. Woodberry Perkins, Instructor in Internal Medicine, University of Virginia.

"Resection for Pulmonary Tuberculosis"—Dr. F. P. Coleman, Richmond.

"The Problem of Lung Cancer"—Dr. E. C. Drash, Professor of Surgery.

"Vascular Anomalies of the Lung"—Dr. Bran Blades, Professor of Surgery, George Washington University School of Medicine, Washington.

### DUKE UNIVERSITY MEDICAL SCHOOL

Dr. Philip Handler, 33-year-old Duke University biochemist, has been named professor of biochemistry and nutrition and chairman of the department of biochemistry, succeeding Dr. W. A. Perlzweig, who died last December.

Dr. Handler joined the Duke staff in 1939 as associate in physiology, nutrition and biochemistry. His current research deals with the use of isotopes in studies of protein and carbohydrate metabolism in the liver and kidney and an understanding of the relationships between dietary factors and renal hypertension.

### BOWMAN GRAY SCHOOL OF MEDICINE

Beta Chapter of Alpha Omega Alpha in North Carolina, the Bowman Gray School of Medicine Chapter, presented a panel on medical education in the school amphitheatre on the evening of April 27th, in connection with the induction of ten new students into the society.

Dr. Alan Valentine, president of the University of Rochester, served as chairman of the panel. Participants were Dr. D. B. Bryan, dean of the school of liberal arts, Wake Forest College, subject, "Medical Education as Preparation for the Professions;" Dr. Currier McEwen, dean of New York University Medical School, "Undergraduate Medical Education;" Dr. Robert C. Berson, assistant dean, University of Illinois School of Medicine, "Medical Education for the Specialists;" and Irving Carlyle, former president of the Wake Forest Board of Trustees, "Medical Education to Meet the Needs of the Public."

The seven Bowman Gray seniors and three juniors nominated for AOA membership are: William T. Bethea, Jr., Dillon, S. C.; James K. Pope, Mt. Mourne; Claude McClure, Jr., Spruce Pine; Ira G. Early, Thomasville; Glenn B. Hayes, Etters P. O. Pa.; Charlotte R. Kay, Charlotte, and Warren H. Jones, Lakeport, N. H., seniors; and David F. Freeman, Raleigh; Livingston Johnson, Winston-Salem, and Horace W. Miller, Jr., Asheville, juniors.

### DUKE MEDICAL PROFESSOR GOING TO PUERTO RICO

Dr. Donald S. Martin, a member of the Duke University Medical School and Duke Hospital staffs for 18 years, has resigned to become dean and professor of microbiology at the newly-established University of Puerto Rico School of Medicine.

Dr. Martin is professor of preventive medicine and public health, associate professor of bacteriology and epidemiologist to Duke Hospital.

The new medical school in Puerto Rico will open its doors for the first time next fall. A first-year class of 50 will be admitted.

### SUMTER HOSPITAL ANNEX

Plans have been announced for a four-story addition to the Tuomey Hospital at Sumter, S. C., by John D. Lee, chairman of the board of trustees. The addition is expected to cost between \$425,000 and \$450,000.

The new structure will have a basement and three main floors, similar to the present building. The old nurses' home will be torn down and the new structure will be erected on the site.

Changes contemplated with the completion of the new wing are the removal of the surgical department from the top floor of the main building to the top floor of the new structure. Offices also will be moved to the new wing, and a new complete kitchen will occupy the basement.

### WASSON NAMED TO HOSPITAL POST

Thomas A. Wasson is the new business manager of H. F. Long Hospital, succeeding E. R. Frye, who has resigned to become administrator of the new Caldwell General Hospital in Lenoir.

Mr. Wasson, a native of Statesville, for the past three has been assistant secretary-treasurer of Turner Manufacturing Company there. He served for four years in the Army as an armored cavalry communications officer.

Mr. Frye went to Statesville last July from Charlotte Memorial Hospital.

### \$6,600 GIVEN HOSPITAL BY RICHMOND PHARMACEUTICAL FIRM

William P. Poythress & Co., Inc., has subscribed \$6,600 to the new Richmond Memorial Hospital for a doctors' room as a memorial to the late William P. Poythress, former head of the pharmaceutical firm.

The room will be used by physicians for consultation, study and conferences with patients. It will adjoin an examining room with a small laboratory where medical tests may be made.

### GENERAL PRACTITIONERS ELECT OFFICERS AND END MEET

Dr. G. G. Dixon, of Ayden, was inaugurated president of the North Carolina Academy of General Practice at a banquet session in the Washington Duke Hotel, Durham, March 21st. Dr. Dixon also is president of the North Carolina State Board of Health.

Other Academy officials installed were Dr. B. H. Duckett, of Canton, president-elect; Dr. L. R. Doffiermyre, of Dunn, vice-president.



Three new councilors also were elected at this session. They are Dr. John M. Newborn, of Farmville; Dr. W. E. Adair, of Dunn; and Dr. William M. Long, of Mocksville.

More than 150 physicians from all parts of the State registered for the second annual general assembly of the Academy which convened in Durham the 19th and concluded with the installation of officers at the banquet session, at which the guest speaker was Dr. Louis A. Buile, head of the Department of Proctology of Mayo Clinic.

#### TWO FIRMS GIVE \$6,600 EACH TO HOSPITAL

A doctors' room in Richmond Memorial Hospital will be established by a \$6,600 subscription in honor of the late Granville Gray Valentine.

The subscription to the \$5,000,000 hospital building fund was made by the Valentine Company, Inc., and members of the Valentine family.

The late Mr. Valentine, president for 51 years of the meat-juice company bearing his name, was a civic leader with a particular interest in history and preservation of landmarks.

Another subscription reported, also for \$6,600, will make possible a private room for patients as a memorial to John Page Wooldridge, who died while the war was on. Young Wooldridge's parents, Mr. and Mrs. A. Chester Wooldridge, and the American Furniture and Fixture Company, of which Wooldridge is president, are the contributors.

#### DR. BLANKINSHIP NAMED TO HEAD CHEST AGENCY

Dr. Rex Blankinship has been elected president of Richmond Memorial Guidance Clinic, a Community Chest Agency.

Dr. William H. Kelly is director of the clinic, which became 25 years old recently. The institution provides psychiatric guidance primarily for children, but started a limited service for adults last September.

DR. J. S. GARNER, JR., has moved to Mullins to become associated with Dr. Frank L. Martin. Dr. Garner is a graduate of The Citadel and of the Medical College of the State of South Carolina. His internship was served at Garfield Memorial Hospital, Washington. Dr. Garner was stationed in the Pacific for two years as a member of the Medical Corps of the Army.

DR. O. B. CHAMBERLAIN, professor of neuropsychiatry at the Medical College of the State of South Carolina, was chief speaker at Chapel Hill, March 30th, at the Fifth Annual Working Conference for Public Health Educators which began its three-day session the 29th under the auspices of the Department of Public Health Education of the University's School of Public Health. His topic was "Mental Health and the Future."

CATAWBA VALLEY MEDICAL SOCIETY—Community Building, Morganton, March 27th, 6:30 p. m.

Program: Retinal Lesions, by Dr. G. M. Billings, Morganton; Osteomyelitis, by Dr. Beverly Hairfield, Morganton; Rheumatic Fever, by Dr. William Patton, Morganton. L. A. Crowell, Jr., M.D., Sec.-Treas.

DOROTHY DONLEY DOWD, M.D., announces the opening of offices in Suite 101, 2311 Connecticut Avenue, N.W., Washington. Practice limited to Adult and Child Psychiatry.

A DISEASED ACTION may, from long continuance, become as it were adopted by the system, so as to occasion disturbance by its suppression.

—From *Syme's Surgery* (1866).

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## BOOKS

**THE CYTOLOGIC DIAGNOSIS OF CANCER**, by The Staff of the Vincent Memorial Laboratory of the Vincent Memorial Hospital. A Gynecologic Service Affiliated with the Massachusetts General Hospital, Boston, Massachusetts. The Department of Gynecology Harvard Medical School. Published under the Sponsorship of The American Cancer Society, 229 pages with 153 figures. W. B. Saunders Company, Philadelphia and London. 1950. \$6.50.

Publication of the monograph of Papanicolaou and Traut, in 1943, so stimulated the interest and emulation of many of the workers in cancer diagnosis that the publications on this subject since that time are now numbered by the thousands. Originally introduced as a means of diagnosing uterine cancer, the utilization of the study of cells in the discharges has been extended to the diagnosis of cancer elsewhere, notably of the stomach, of the lung, and of the urinary tract.

In this book is presented material from one large laboratory which has used cytological diagnostic methods since 1942. It is made clear that the use of smears of gastric secretions and of urine sediment is regarded as being still in the research stage. As would be anticipated in a book on cytologic diagnosis early as such space is given to illustrations as is given to text.

It is not to be expected that the smaller clinical laboratories will undertake the carrying out of this kind of diagnostic procedure; but, for the larger and best equipped laboratories, this book supplies information well-nigh indispensable.

**PENICILLIN: ITS PRACTICAL APPLICATION**, Under the General Editorship of PROFESSOR SIR ALEXANDER FLEMING, M.B., B.S., F.R.C.P., F.R.C.S., F.R.S., Professor Emeritus of Bacteriology, University of London; Principal, Wright-Fleming Institute of Microbiology, St. Mary's Hospital Medical School, London. Second edition. *The C. V. Mosby Company*, 3207 Washington Blvd., St. Louis 3. 1950. \$7.00.

That marvelous drug penicillin! Here we have from the pen of some 30 authorities on the subject, and edited by Sir Alexander Fleming himself, an account of the wonders that penicillin has performed in the whole scope of medicine and surgery. Account is given also of penicillin's sensitivity and a special chapter on penicillin, and another is given to the general practitioner. There is a chapter on streptomycin and an appendix treats of chloromycetin and aureomycin.

In the three years since the first edition of this work came out penicillin treatment has become much better standardized, the product has been increasingly purified, and the introduction of procaine penicillin has greatly simplified the technic of administration. Indeed, the editor says that it seems likely that procaine penicillin will com-

pletely displaced crystalline penicillin.

Every practitioner of medicine will wish to get from the fountain-head information on this discovery—more properly, this elaboration—which has so wonderfully multiplied the power of the doctor over disease and death.

**PROCEEDINGS OF THE FIRST CLINICAL ACTH CONFERENCE**, by JOHN R. MOTE, M.D., Editor. *The Blakiston Company*, 1012 Walnut St., Philadelphia 5, Pa. 1950. \$5.50.

It is probable that, save for penicillin, not since the announcement of the addition of insulin to our therapeutic armamentarium, has the introduction of any remedy been hailed with so much hopeful interest as has ACTH. For the past year hardly a medical society whose members are drawn from a larger area than a county has held a meeting which did not feature hopeful anticipation of great results from this remedial agent. Every doctor alive to the best interests of his patients (and that means at least 99 per cent of us) desires to know all that is known about this agent and its potentialities. This book presents this information right up to now.

**VARICOSE VEINS**, by ROWDEN FOOTI, London. *The C. V. Mosby Company*, 3207 Washington Blvd., St. Louis 3. 1949. \$8.00.

The vast majority of the enormous number of writings on varicose veins admit that the treatment in a large percentage of the cases proves unsatisfactory. The present volume is put out as the first book written solely on the subject of varicose veins published in Great Britain. The author is impressed with the act that varicose veins, besides being important to the individual, constitute a national problem, the total number of man hours lost to industry from phlebitis and ulceration being enormous.

A brief history of the development of our knowledge of the subject is prefixed. Then we have a consideration of the anatomy, physiology and pathology. Then come chapters on incidence and etiology, investigation of the patient, treatment, varicose ulceration, thrombo-phlebitis and pulmonary embolism, anticoagulant therapy and the supportive and compression treatment in varicose conditions. Especially informative is the chapter on the varicose vein clinic, and very welcome are "some useful prescriptions." The text is well complemented by many well-chosen and well-executed illustrations.

**MEDICAL GYNECOLOGY**, by JAMES C. JANNEY, M.D., F.A.C.S., Associate Professor of Gynecology, Boston University School of Medicine; Associate Visiting Gynecologist, Massachusetts Memorial Hospital. W. B. Saunders Company, Philadelphia and London. 1950. \$6.50.

In teaching and practicing for 25 years the au-

thor has been impressed with the slight emphasis on physiologic and pathologic considerations, and the failure to correlate the formal textbook presentation with the patient's complaints. The author's aims have been to aid the student in such correlating and to provide the practitioner with information ample to keep his knowledge in this field adequate. The arrangement is: history and physical examination, complaints, physical findings, tests and special examinations, gynecologic treatment, sociomedical problems in gynecology, and irradiation or operation?

This is a book which lives up to the promise of the author. Its content is useful information, well arranged and admirably indexed.

A MANUAL OF CARDIOLOGY, by THOMAS J. DRY, M.A., M.B., Ch. B., M.S. in Medicine. Associate Professor of Medicine, University of Minnesota (Mayo Foundation); Consultant in Section on Cardiology, Mayo Clinic. New, Second Edition. 355 pages with 97 figures. W. B. Saunders Company, Philadelphia and London. 1950. \$5.00.

The first edition of this book was given enthusiastic welcome by this journal, because it had demonstrated the fact that a person who knows his subject well can give all the essentials in a few words. The present volume has been completely revised to keep pace with all advances in this field, yet it appears to contain fewer words even than the first. The book is written to give doctors, especially those in general practice, all the information extant on the subject of diseases of the heart, and, not even incidentally, to parade the author's acquaintance with every theory that has been advanced and every piece of "research work" that has been done.

Buy the book, learn all that is taught in its 300 pages, and seldom will one of your patients need to consult a specialist in this field.

#### DIPHENHYDRAMINE (BENADRYL) FOR NOCTURNAL LEG CRAMPS

(Meyer Naide, Philadelphia, in *Jl. A. M. A.*, April 15th)

Nocturnal cramps in the legs are common and very distressing. The usual history is that of a severe contraction of the muscles of the calves awakening the patient. The cramp sometimes affects the thigh or foot, from a mild contraction of the muscle to extreme spasm that may give agonizing pain. The symptom is not primarily circulatory, often occurring in patients without disease of the arteries or veins.

Most doctors will be glad to learn, on the statement of Naide, that this condition in the extremities can usually be prevented by administration of quinine or quinidine sulfate (0.2 or 0.3 Gm.) at bedtime, and that he has used diphenhydramine even more successfully in more than 100 patients: 50 per cent of women who are pregnant complain of leg cramps, at times severe.

Obstetricians may hesitate to prescribe quinine for relief of leg cramps in pregnancy, whereas diphenhydramine is not contraindicated. Further in some cases quinine did not prevent the cramps, whereas diphenhydramine did.

An illustrative case reported by Naide:

A woman, aged 65, had nocturnal leg cramps for several

years. For a month the cramps in the calves and thighs had been extremely severe, and for a week these had occurred every night at 2 to 3 o'clock. The cramps awakened her, and the pain was so severe that she would scream; members of her family would rub the legs with alcohol and apply heat. No abnormality of the blood vessels. Diphenhydramine hydrochloride, 50 mg., to be taken each night, was prescribed, and she had no cramps after administration of the first dose. Three weeks later she stopped taking the drug. A mild cramping returned but this bothered her so little that she did not consider it necessary to resume therapy.

Some of the patients had had these cramps every night for weeks or months. The prompt relief after they took the first capsule suggests that the medicament was responsible. Also, when some patients discontinued diphenhydramine after obtaining relief, the cramps returned and was again prevented by use of the drug.

Another desirable action of the compound is the drowsiness that develops in so many patients who take it. Since these cramps occur at night, the drug has the advantage of helping the patient to sleep. However, drugs that produce sedation only, without having the other properties of diphenhydramine hydrochloride, do not prevent nocturnal cramps. The mechanism by which the drug relieves this condition is not known.

**TOMATIN.**—An antibiotic has been isolated from young tomato plants which is reported to have inhibitory action on the causative organism of histoplasmosis.

**INFARCTION OF THE APPENDICES EPILOICAE** is not a common disease, but it should be considered in the differential diagnosis of an acute abdominal emergency.

#### DIED

Dr. Paul Conway Carter, 60, of Madison, N. C., died March 25th at McGuire General Hospital, Richmond, following four months illness.

In World War I he served in France. During World War II he was stationed on Ascension Island in the South Atlantic. After his discharge in 1945 with the rank of colonel, he was with the Veterans Administration at Winston-Salem for one year before resuming practice at Madison.

For a time after World War I he lived at Weldon while with the State Board of Health, then moved to Madison in 1923. A year later he organized the National Guard Hospital Corps and served for years as commander of that unit.

Dr. Carter was a native of Holly Springs and a graduate of Wake Forest College and the University of Maryland Medical College.

Dr. James Gideon Brown, 82, who had practiced medicine at Woodville, Va., for 56 years, died at his home March 4th. He was a native and lifelong resident of Rapahannock County and a graduate from the University of Pennsylvania Medical School in 1889.

Dr. John Patrick Monroe, 79, died March 17th at his home at Sanford, N. C., after 21 years of invalidism. He was the son of William Alexander and Eliza Jane Monroe of Moore County. He was educated in the schools of Siler City and the College of Physicians and Surgeons in Baltimore. He and his brother, Dr. William Alexander Monroe, formed a partnership which lasted until the latter's death in 1926.

In 1906 Dr. John Monroe founded the Central Carolina Hospital at Sanford and was its chief surgeon and physician until his retirement in 1929.



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JAMES M. NORTHINGTON, M.D., Editor

VOL. CXII

MAY, 1950

No. 5

## Hyperparathyroidism

RUSSELL BUXTON, M.D., and A. A. CREECY, M.D., Newport News, Virginia

AMOS KOONTZ, M.D., Baltimore (by Invitation)

**H**YPERPARATHYROIDISM is a disease of the parathyroid glands, characterized by the formation of single or multiple adenomata in which an excessive amount of parathyroid hormone is excreted. Although a disease which has come into prominence during the last half century, the medical profession is becoming more conscious of its importance with the increasing number of cases reported in the literature and with increasing recognition of the disease. The parathyroid glands were first described in 1880, and the presence of primary tumors was first described in 1900 and 1902. The disease was first associated with changes in the skeletal system in 1904 and it was not until 1925 that the first surgical removal of an adenoma of the parathyroid was performed. The surgical history of the disease, therefore, extends over a period of only twenty-five years.

In 1947 Norris<sup>1</sup> reviewed reports of 322 cases of parathyroid adenoma collected since 1903. Since that time several additional cases have appeared in the literature. In view of the rarity of the disease and the short period of time during which the statistics have been compiled, it has been advocated that all additional cases be reported so that knowledge concerning this disease may be increased, and

it is with this in mind that this report is being made. Parathyroid tumors have been found from the second to the eighth decades and the greatest number have been found in patients in the fifth decade. There is a preponderance of the disease in females over the males of about three to one. The disease is confined to a single adenoma in a great majority of cases, and therefore, only involves one of the parathyroid glands.

There is no classical symptomatology characteristic of this disease. In the early stages the patient may be conscious of fatigue, loss of weight and general malaise. As the disease progresses insidiously, symptoms related to the skeletal system and to the urinary tract may present themselves, as action of the parathyroid hormone tends to increase the excretion of calcium through the urinary tract and to deplete the amount of calcium in the skeletal system. It is interesting to note that in many cases, only one system may be involved and according to Norris<sup>1</sup> 59.3 per cent of 322 cases reviewed showed involvement of the skeletal system alone, and 5.3 per cent showed involvement of the urinary system alone. One hundred and one or 31.4 per cent showed involvement of both skeletal and renal systems. However, Cope<sup>2</sup> in 1941 observed that the precipitation of calcium in the urinary tract was the most common complication in hyperparathyroidism. Those cases having in-

To the Fifty-first Annual meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Fayetteville, N. C., February 20th-21st, 1950.

volvement of the urinary tract are usually recognized by their symptoms of renal colic, backache or hematuria. They may also give a history of having passed calculi and in this event all cases should have studies of the blood and urine made with particular reference to calcium and phosphorus metabolism. In a great majority of cases, there is a hypercalcinuria and hypercalcemia with corresponding hypophosphatemia. If the skeletal system is involved, x-ray studies will usually show characteristic bony changes. Once the diagnosis is made, surgical removal of the adenoma is essential.

would, therefore, resolve itself to the complete removal of the adenomatous parathyroid tissue whether it be in its normal position or in the mediastinum and also to be certain that only one gland is adenomatous.

The following case is described in detail:

*Miss A. W.:* A 41-year-old white nurse, who had been under care for twenty years for various ailments, was seen on January 28th, 1949, complaining of bloody urine which had been noticed for one week. She gave a history of renal colic with passing of stones in 1941, 1943 and 1945. She



Figure 1



Figure 2

It is well agreed by many authors that there is no medical therapy for the treatment of primary hyperparathyroidism and that roentgentherapy is also unsatisfactory<sup>2,3,4</sup> and it is due to the efforts of Cope<sup>2</sup> that the surgical treatment has been made almost routine. This author<sup>2</sup> points out that the plan of surgery of hyperparathyroidism concerns the size and site of the tumor. Cope<sup>2</sup> also points out that the parathyroid bodies occur not only adjacent to the thyroid gland in their normal anatomical position but also occur in the mediastinum. He emphasized the importance of opening the mediastinum if the gland is not found in the neck, and correlated the size of the gland with the severity of the symptoms and having operated upon more than 99 cases, his opinions are to be respected. The surgical treatment of the disease

was seen following her discharge from the army in 1946, with severe lower abdominal pain associated with vaginal discharge and marked cystic cervicitis which responded to cauterization and conservative treatment. A biopsy of the cervix was negative at that time for malignancy.

Urine specimen showed occasional red blood cells and a few white cells, to which no significance was attached. In January, 1949, following admission to the hospital for diagnostic studies, general physical examination showed a normal white adult woman with diffuse enlargement of the thyroid gland, more marked on the right side. Chest and heart were negative, blood pressure 149/90; abdominal and pelvic examinations were negative. X-ray examination showed bilateral nephrocalcinosis as shown in Figure 1. The patient

was discharged the following day with a diagnosis of nephrocalcinosis and hyperparathyroidism.

As an out patient further studies showed the red blood cells to be 3,600,000, hemoglobin 75 per cent, white blood cells 7,650 with 64 per cent polymorphonuclears. Blood urea was 36 mgms. per cent and blood phosphorus 1.5 mgms. per cent, blood calcium 15.4 mgms. per cent and the basal metabolic determination was minus six. Blood cholesterol was 165 mgms. per cent. The patient had no further difficulty and on February 22d, 1949, four weeks following her initial admission, she was readmitted for operation, preliminary diagnosis being adenoma of a parathyroid gland with nephrocalcinosis. Additional history revealed that the patient had been born in Pennsylvania and moved to Virginia at the age of four. She had a tonsillectomy in 1929 and an abscess of the breast incised in 1937. At that time her basal metabolic rate was plus three. There was no history of hyperthyroidism or tuberculosis in the family but the patient's mother and paternal grandmother had diabetes. On the day of admission, February 22d, 1949, laboratory findings showed that the urine was essentially negative, blood count was normal, Wassermann was negative; blood phosphorus was 2.8 mgms. per cent, blood calcium 14.5 mgms. per cent.

The patient was operated upon on February 24th, 1949, under avertin and cyclopropane anesthesia. The mediastinum was first explored because of the large amount of fatty tissue noticed, as soon as the neck dissection was finished. This tissue was removed and a frozen section disclosed it to be thymus tissue. Further exploration showed that there was a solid tumor posterior to the thyroid on the right side. This tumor which measured 5x3x3 cms. and was well encapsulated, was removed without difficulty other than some apparent interference with the blood supply of a portion of the right lobe of the thyroid gland, which was also removed. Exploration of the left lobe revealed a small, gelatinous mass 1 cm. in length. This was on the posterior aspect of the left lobe of the thyroid and was removed. The patient left the operating room in good condition and had an uneventful convalescence. Three days post-operatively her blood calcium was 13.4 mgms. per cent, blood phosphorus 2.4 mgms. per cent; nine days post-operatively her blood calcium was 10.5 mgms. per cent, blood phosphorus 3.3 mgms. per cent, blood cholesterol 140 mgms. per cent. Basal metabolic rate several weeks after her discharge from the hospital was minus ten.

The patient has gotten along nicely except for one period of acute depression ten months post-operatively for which no reason could be found, and an attack of pain in the left elbow which was

diagnosed as acute olecranon bursitis. In December, 1949, her blood calcium was 11.4 mgms. per cent. The patient has been under observation during the twelve months since operation and she seems to be entirely normal except for the above complaints. There has been no change in the status of the urinary condition as evidenced by figure 2, but she has had no further attacks of kidney colic.

#### SUMMARY

A brief resumé of the history of hyperparathyroidism and the treatment of the disease with a detailed case report is presented.

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#### Discussion

ISAAC E. HARRIS, JR., M.D., Durham, N. C.:

MR. CHAIRMAN: I feel honored to be asked to discuss our President's paper. He and his associates are to be congratulated upon their diagnosis, management and presentation of a case of so rare a condition. My experience with hyperparathyroidism has been too limited to justify an authoritative discussion of this paper.

Hyperparathyroidism is a rare condition. In our hospital only seven such cases have been diagnosed since 1938, none since 1941. This is seven cases out of 120,000 admissions. Up to 1942 only 14 cases had occurred at the Mayo Clinic.

Since this condition is rare and there are no classical symptoms, one should always suspect hyperparathyroidism when one encounters the following: Easy fatigability, loss of weight with generalized muscle weakness and malaise, lack of coordination, bradycardia, constipation, nausea and vomiting, pain in the bones, pathological fractures, cysts and tumors of bones, and urinary stones with their associated symptoms. Therefore, it is those men doing orthopedics, urology and x-ray work especially who should suspect this condition, because the changes in the skeletal and urinary systems secondary to faulty calcium metabolism are the ones that first present themselves.

As the essayists have brought out, preoperative diagnosis depends upon the characteristic changes in the value for calcium and phosphorus, and radiological evidence of decalcification, with surgical removal of all abnormally functioning parathyroid tissue the only satisfactory treatment. This is not an easy procedure in all cases. Cope has shown that in 18 per cent of cases the abnormal tissue, adenoma or hyperplasia, is found in the mediastinum, most often the anterior mediastinum. He recommends exploration of the anterior mediastinum by division of the sternum if no lesion is found in the usual sites. It must be kept in mind that there may be more than one adenoma and more than one parathyroid involved. Also too much parathyroid tissue may be removed.

Preoperatively, one should not give calcium as this may increase renal damage, and in severe hyperparathyroidism might precipitate parathyroid poisoning, which can be fatal. Postoperatively, one should ever be mindful of tetany. The skeletal system makes up its depletion rapidly and hypocalcemia results until calcium balance is established.



# Sources of Potential Error in the Interpretation of Uterine Malignancy by Papanicolaou's Method\*

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THE USE OF Papanicolaou's smear method in the detection of cancer cells is an accepted adjunct to the diagnosis of malignant tumors by pathologic examination. The method is used more extensively in gynecology and obstetrics than in other clinical fields. The gynecologists, especially, and those who otherwise may have followed the procedure are acquainted with its advantages. Many of the clinicians who routinely use Papanicolaou's technic may not be aware of the potential errors which could influence interpretation.

This paper presents in outline form conditions which may occur in the various stages of the smear technic that can result in mistaken interpretations.

## I. Obtaining the Smears

A Too few epithelial elements in preparations resulting from:

- 1 Vaginal douch
- 2 Immediately previous pelvic examination
- 3 Dry, juvenile or senile mucosae
- 4 Dry lesions of the vulva—
  - a Leukoplakic
  - b Wart-like
  - c Well-epithelialized and without exudate
- 5 Necrosis
  - a Advanced, sloughing lesions
  - b During and after Roentgen or radium therapy
- 6 Preponderance of leukocytes—
  - a Acute infection
  - b Chronic infection and inflammatory processes
  - c Irradiation therapy
- 7 Preponderance of erythrocytes—
  - a Normal periodic bleeding
  - b Abortion—
    - (1) Threatened
    - (2) Incomplete
    - (3) Post-abortion
  - c The immediate puerperium
- 8 Preponderance of mucus
- 9 Dilution by extraneous matter—
  - a Fistulae

\*From the Robert E. Seibels, Jr., Memorial Laboratory, Department of Obstetrics and Gynecology, Duke University School of Medicine and Hospital.

A part of the expense of this study was defrayed by funds from a grant to W. Kenneth Cuyler by the Research Council of Duke University. We gratefully acknowledge funds from Mrs. A. K. (Hattie) Barrus, Kinston, N. C., given in the interest of cancer research. Additional aid was received from the North Carolina State Laboratory of Hygiene. The greater part of the expense, however, was defrayed by a grant to W. Kenneth Cuyler by the Cancer Control Branch, National Cancer Institute, U. S. Public Health Service.

- 1 Urine in vesico-vaginal drainage
- 2 Fecal material in recto-vaginal fistula
- b Lubricant from examining glove
- B Cellular content of smears may show cytolysis and hemolysis in:
  - 1 Stagnant vaginal pools
  - 2 Bleeding and necrosis of advanced carcinoma of the cervix
  - 3 Malignancy of the endometrium
  - 4 Bleeding from submucous myoma uteri
  - 5 Irregular uterine bleeding—
    - a Climacteric
    - b Post-menopausal
- C Amount of material on slide:
  1. Very thin smears may result in—
    - a Drying too quickly thereby causing poor fixation
    - b Sparsity of epithelial cells
  - 2 Thick smears may be—
    - a Poorly fixed due to increased time for fixation
    - b Difficult to interpret because of crowded cells
- D Absence of representative cells because of:
  - 1 Inability to visualize cervix for specimen due to
    - a Obesity
    - b Tumor growth
    - c Distortion following irradiation therapy
  - 2 Stenosis of cervical canal
  - 3 Lack of cellular exfoliation as in sarcomatous degeneration of myoma
  - 4 Any of the items in A above.

## II. Fixation of Smears

- A Faulty fixation may be the result of:
- 1 Stale, weakened solution
  - 2 Incomplete immersion due to evaporation of fixative
  - 3 Allowing smears to dry prior to fixation
  - 4 Failure to separate slides in container which causes—
    - a Retarded, and, therefore, poor fixation
    - b Scratched surfaces
    - c Possible contamination
- B Smear preparations for mailing should be:
- 1 Properly fixed prior to shipment
  - 2 Coated with glycerin and covered with a 24x50 mm. plastic cover-slip<sup>1</sup>

## III. Staining Procedure

- A Disproportionate dye quantities can result in:
- 1 Preponderance of basophilic staining cytoplasm
  - 2 Preponderance of acidophilic staining cytoplasm
  - 3 Unbalanced pH which causes fading of stain
  - 4 Lack of differentiation
- B Over-staining or under-staining prevents:
1. Charles F. Hulbs and Co., 389 Lafayette St., New York 3, N. Y.

- 1 Constant nuclear density which is needed as a standard for comparison
  - 2 Differentiation of nuclear detail
  - 3 Clearness of cellular outlines
- C Temperature changes:
- 1 In hot weather causes—
    - a Over-staining by hematoxylin
    - b Over-staining by the eosin counter-stain
    - c Increased density due to evaporation
  - 2 In cold weather under-staining occurs unless staining time be increased
- D Stale solutions through failing to clear properly result in:
- 1 Uniform cloudiness of smear
  - 2 Inability to distinguish minute nuclear details

#### IV. Interpretation by Cytologist

##### A Technical imperfections:

- 1 Any detail in the categories above may lead to incorrect interpretation because of, chiefly—
  - a Lack of cellular constituents
  - b Poor fixation
  - c Inferior stain
- 2 Experience which is necessary for accuracy of interpretations is gained and maintained only by—
  - a Continued study of smear cytology
  - b Constant comparison of pathology reports with the interpretation of concomitant smear cytology
  - c Cessation of unrelated part-time duties

##### B Benign pathologic cytology may resemble the malignant cytology in:

- 1 Free nuclei of granulating tissue because of—
  - a Variation in size
  - b Hyperchromatism
  - c Heavy peri-nuclear membranes
  - d Multiple nucleoli of variable size
- 2 Chronic infection resulting in—
  - a Irregularities in size of cells and nuclei
  - b Hyperchromatism
- 3 Incomplete abortion
- 4 Atrophic vaginal mucosa in which—
  - a Marked atrophic changes may show
    - (1) Grouping of free, hyperchromatic nuclei, which resembles adenocarcinoma
    - (2) Large hyperchromatic nuclei in cells of irregular shape which resemble squamous-cell carcinoma
  - b Acidophilic vaginal epithelium with densely opaque nuclei of variable size may suggest squamous-cell carcinoma
  - c Large, free, hyperchromatic, irregular masses of chromatin material closely resembling malignant nuclei were seen
- 5 Cervical mucosa which has been recently cauterized

##### C Cancer cells may not appear malignant particularly in:

- 1 Adenocarcinoma of the endometrium when—
  - a The malignant nuclei are small, of uniform size and not hyperchromatic
  - b The tumor cells may be mistaken for—
    - (1) Polypoid hyperplasia
    - (2) Adenomatous hyperplasia
  - c Marked metaplasia suggests atypical squamous epithelium
- 2 Sarcoma of the uterus or vagina
- 3 Recurrence which follows irradiation of squamous-cell carcinoma of the cervix or endocervix

##### D Intraepithelial carcinoma of the cervix may be mistaken for:

- 1 Cervical lesions during pregnancy which regress following delivery
  - 2 Metaplasia of endocervical epithelium
  - 3 Adenocarcinoma
  - 4 Squamous-cell carcinoma
- E The type of malignancy may be difficult to distinguish when:
- 1 Undifferentiated squamous carcinoma cells resemble those of anaplastic adenocarcinoma
  - 2 Metaplasia in adenocarcinoma resembles squamous-cell carcinoma
  - 3 Variations in cell morphology and lack of cell-grouping may cause adenocarcinoma to appear as squamous-cell carcinoma
- F The presence of cancer cells not frequently to be found in genital smears may result in wrong interpretations, e.g.:

- 1 Genital organs
  - a Oviduct
  - b Ovary
- 2 Other systems—
  - a Digestive
  - b Urinary

In recent months, we have been asked to discuss the faults of Papanicolaou's smear technic for cancer detection. This indicates to us that those who intend to employ the method want to begin with as great efficiency as possible. The outline given lists the sources of our most frequent errors. It summarizes our criticisms of a valuable aid in cancer detection. These observations were made during three-and-a-half years in which time 39,142 smears from 11,941 patients were studied.

Many of the conditions which result in poor smears cannot be obviated when smears are being made by several individuals in a large clinic. The time element is largely responsible for this. The time required to make the smears is negligible. The consultants, however, usually are rushed because of the number of patients they must see. Indifference to the finer points of the technic produces many poor smear preparations.

Those experienced in the method can anticipate many sources of error and thereby reduce the number of mistakes made.

It is our belief that after a certain time these potential errors probably are reduced to a relatively stable number and that the resultant percentages of error in over- and under-interpretation will not vary widely.

It does not come within the scope of this paper to criticize the clinician's interpretation of cytology reports. In this connection, we will only say that, according to our standards, the three mistakes made most frequently by those to whom reports are given are: 1) the assumption that a report "question of malignancy" signifies that no cancer exists; 2) the assumption from the same type of report that cancer exists; 3) the failure to verify smear interpretations of cancer by biopsy or curettage.

## Recent Developments in Treatment of Rocky Mountain Spotted Fever

JOSEPH B. STEVENS, M.D., Greensboro, North Carolina

**BY DEFINITION** Rocky Mountain spotted fever is an acute, specific, infectious endangitis, chiefly of the peripheral blood vessels, transmitted by ticks and characterized by onset with chills; continued fever terminating in lysis; severe pains in bones and muscles; headache; and a macular eruption, becoming petechial, which appears first on wrists, ankles, and back, and then over the whole surface of the body.

This disease has existed in the Rocky Mountain area of the United States since the first settlement by white man, and was known to the Indians before the white man arrived. It was first described by Surgeon Major W. W. Wood in 1896 in a report to the Surgeon-General, and from that time until 1947 no specific treatment for this disease existed. Ricketts<sup>1</sup> established the transmission of the disease by the tick and defined most of the problems which have resulted in our present knowledge of the disease and its causation. Since his classic and monumental investigations, a great deal has been learned about Rocky Mountain spotted fever, especially its distribution and incidence, as well as its etiology and morbid anatomy.

I am sure that we could say that diseases of the Rocky Mountain spotted fever group exist throughout the world wherever ticks have opportunity to feed upon men. Probably most of the rodents and other mammals, which nurture the ticks, are reservoirs of the rickettsiae. In addition the rickettsiae are transmitted hereditarily in the tick.

The identification of the disease in the East by Badger, Dyer and Rumreich<sup>2</sup> in 1931 was followed by the rapid recognition of its prevalence in the Central and Eastern States. At the present time the only states from which the disease has not been reported are Maine, Michigan, Mississippi, New Hampshire, Vermont and Wisconsin. In the East the highest incidence is in Maryland, Virginia and North Carolina. The seasonal incidence of the disease corresponds to the tick seasons of the localities concerned. They are most prevalent in North Carolina from the middle of March until the middle of June, and hence spotted fever in this region occurs from March to July with occasional cases later up to October, with the greatest incidence in June and July. The *Dermacentor variabilis* in the East appears and is most abundant during this period.

In 1925 the United States Public Health Service prepared a vaccine from ticks, which has proved of great value in prophylaxis. Its use has reduced the number of cases, and it protects completely against less virulent strains and greatly lessens the severity of the disease where it is most deadly. The immunity from the vaccine reaches its height within a year. The vaccine should be used each spring in order to protect people constantly exposed to this disease.

From the first description of the disease by Surgeon Major W. W. Wood in 1896 until 1947 the mortality varied greatly, but remained fairly constant in different localities. In the Bitter Root Valley of Montana it was over 80 per cent for adults and 37.5 per cent for children. In Brazil the mortality rate was above 80 per cent. The overall mortality was approximately 20 per cent for this disease.

In 1947 Tichenor, Ross and McLendon<sup>3</sup> of Washington, D. C., reported general considerations in 36 cases of Rocky Mountain spotted fever and on the specific management of 8 with PA BA. In the 8 patients treated with PA BA, 6 children and 2 adults, toxicity and duration of the disease and morbidity seemed less than in the other patients. The fatality rate in the control group was 10 per cent, whereas there were no deaths in the 8 patients treated with PA BA. The 6 children were given five-tenths gram of PA BA per lb. body weight for twenty-four hours, and a two-hour divided dosage schedule. The 2 adults were given 6 grams initially and 4 grams every four hours thereafter. PA BA blood levels could be maintained between 15 and 36 milligrams per cent with these dosages. Therapy was maintained for an average of seven days and was usually discontinued within two to four days after temperature became normal. Numerous investigators since 1947 have reported on this type of therapy and it is well known at the present time. It has certain dangers, however, must be controlled by hospital admission and has not proven very effective after the eighth day of the disease. It appears, however, that PA BA therapy reduced the fatality rate in Rocky Mountain spotted fever from approximately 20 per cent to around 5 per cent, and this was certainly a milestone in the progress and treatment of this disease.

The use of Chloromycetin was reported by Pincoffs *et al.*<sup>4</sup> in the fall of 1948. The drug was given to 15 patients with Rocky Mountain spotted fever and the patients were observed

Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.



throughout the remainder of the febrile course and convalescence in the hospital. The diagnosis was confirmed in all patients. None of the subjects had a history of any other type of infection capable of producing the clinical picture. Complement fixation reactions were positive in all patients. Chloromycetin was administered orally. The initial dose was approximately 75 milligrams per kilogram estimated weight and was administered in two or three parts at about one-hour intervals. Thereafter, 250 milligrams was given every three hours to children under sixteen and 500 milligrams every three hours to older patients. In all but the first four patients the drug was discontinued when the temperature had remained below 100° F. rectally for twenty-four hours. Clinical improvement occurred in all patients within the first twenty-four hours but was not striking until the second day, when headache, and mental dullness were greatly relieved. After initiation of the Chloromycetin treatment, eruptions did not spread and by the end of the second day they had receded. In most patients, convalescence was established by the third day. Temperature was normal within seventy-six hours after the initial dose. The average duration of fever after initiation of therapy was 2.2 days.

The Aureomycin therapy of Rocky Mountain spotted fever was reported by Ross, Schoenbach *et al.*,<sup>5</sup> in the winter of 1948 when it was administered to 13 patients with Eastern type Rocky Mountain spotted fever. Three doses, each containing 2.5 milligrams of Aureomycin per kilogram, were given at hour intervals at onset of therapy. Thereafter, the same dose was given every two hours until the temperature had been normal approximately 48 hours. Then the interval between doses was changed to four hours. The period of therapy varied from four and a half to nine days. The total dosage varied from 2.3 to 16.3 grams and averaged 9.5 grams. Nausea and vomiting during the first two days in four patients was helped by simultaneous administration of Aluminum Hydroxide. Striking clinical improvement occurred in all patients and some were moribund before the treatment was started. In 11 of the 13 patients the course of the disease was so promptly altered that no supportive treatment was required. Average number of days of fever after Aureomycin therapy was 2.3 days.

In the last year many reports in numerous Journals have appeared substantiating the successful use of Chloromycetin and Aureomycin in the treatment of Rocky Mountain spotted fever. It is concluded that Aureomycin and Chloromycetin were superior to PA BA in the treatment of Rocky Mountain spotted fever. Though it has been generally agreed that PA BA was of no benefit unless treatment was instituted during the first week, treatment with the

antibiotics instituted after the eighth day has been successful. Chloromycetin and Aureomycin appear relatively non-toxic in contrast to PA BA, which has produced leukopenia, and liver and kidney damage. The use of the two latter drugs makes it possible to treat the patient successfully in the home without laboratory studies and prolonged hospitalization. The effectiveness of Aureomycin and Chloromycetin in the treatment of infections caused by rickettsiae and by viruses of the psittacosis group is of great theoretic interest in that it is the first instance in which a therapeutic agent of this type has been able to penetrate the barrier of the cell membrane and eradicate a pathogenic organism ensconced within the cell. Neither the antibodies present in the immune serums or the Sulfonamides nor other antibiotics hitherto available have been able to do this.

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#### REMARKS ON "THE PUBLIC RELATIONS OF THE MEDICAL PROFESSION"

(C. A. L. Reed, M.D., Cincinnati, in *Trans. Tri-State Med. Assn.*, 1908)

(Extracts From an Address to the Tri-State Medical Association 40 Years Ago, by an Ex-President of the A. M. A.):

When a group becomes a robber group, it becomes the duty of all the other groups to organize for existence.

Don't forget the welfare of your profession.

Don't forget that it depends upon your protective ability.

Don't forget that you have a social relationship that you can not ignore.

Don't forget that you have responsibilities of citizenship that you can not ignore.

Last night I thought, as I came through Washington, and saw the lights in all parts of the city, that I could see both halls of Congress, and letters which could be read across the continent were written on them, announcing: "Wanted—more farmers, more merchants, more manufacturers, more physicians."

The same device could be discerned above each of your state houses—the capitols at Raleigh, Columbia and Richmond.

**EPILEPSY.**—At the present time, 5,5 phenylhydantoin is the safest and most effective compound for the treatment of grand mal and psychomotor seizures. Tridione is the most effective drug for the treatment of petit mal seizures. —*Journal-Lancet*, March.

## General Practice and Its Assets

WINGATE M. JOHNSON, M.D., Winston-Salem, North Carolina

IT WAS with some misgiving that I agreed to discuss the subject assigned me. While I am in full accord with its implications, I have talked and written so much about the general practitioner that it will be necessary to repeat much that I have already said. For doing so I ask pardon in advance.

Another cause for misgiving is that, by a process of evolution, I have come to limit my practice to internal medicine. I am doing my best to atone for leaving the ranks of general practice, however, by trying to encourage as many young men as possible to be family doctors. The fact that two-thirds of the men who have graduated from the Bowman Gray School of Medicine are in practice as general practitioners, and that the same proportion of members of the last several classes expect to go into general practice encourages me to believe that we are doing a fairly good job of supplying the demand for family doctors.

Dr. Jim Nothington is really responsible for my being here. As everyone here knows, he has for a great number of years championed the cause of the general practitioner. He is responsible for the fact that the Medical Society of the State of North Carolina had the first Section on General Practice in the Union. *Southern Medicine & Surgery* was the first medical journal in America to have a Department of General Practice, and for nearly a decade I served as editor of this department.

### DEFINITION OF GENERAL PRACTITIONER

At the beginning of any discussion, it is well to define the terms used. According to the American Academy of General Practice, "A general practitioner is defined as a legally qualified physician who does not limit himself to one field of medicine." This definition also would apply to my conception of a family doctor. The late Dr. Robert Wilson, of Charleston, many years ago drew a distinction between a family doctor and a general practitioner. He said that theoretically, at least, the field of the general practitioner was unlimited, but that the family doctor might limit his work as much or as little as he chose, so long as he made himself responsible for the health of the families under his care. My own preference is for the family doctor concept—perhaps because most of my years in practice, and certainly my happiest ones, came after

I discovered that it was possible to have the loyalty of my families without doing obstetrics. I had never attempted surgery, except of the most minor sort.

In any town where there are two or more doctors, it should be possible to divide the work so that each does what he prefers to do—and consequently does better work than he otherwise could. In almost any group of family doctors, some one—only the Lord knows why!—will really like obstetrics; another, pediatrics; another, internal medicine. These men need not be certified in order for one to assume responsibility for the safe arrival of the babies, another for their care and feeding after delivery, and another for the medical problems that may arise. It is a debatable—and ticklish—question as to whether a general practitioner should attempt to do major surgery, unless under exceptional circumstances. An appendectomy may be one of the easiest or one of the most difficult jobs imaginable. At any rate, there can be no argument over the statement that medical illnesses are far more frequent than surgical ones.

### ASSETS OF THE GENERAL PRACTITIONER

An asset, according to Webster, is: "1. Any item of value owned; 2. Hence anything which is a support, a resource, or a source of strength."

What are some of the assets of the general practitioner (or family doctor)?

1. First of all, he has a *goodly heritage*. From the time of Plato, at least, the literature of all countries has paid tribute to the family doctor. From Luke, the "beloved physician" of the New Testament, to almost any publication of today, we find the family doctor honored by writers. One of the greatest stories of all time is Ian Maclaren's "Doctor of the Old School." I recommend it to any family doctor who needs a boost to his self-respect.

2. One of the most material and practical assets of the general practitioner is as much *security* as anyone can expect to have nowadays. This security applies, first of all, to his income. It is true that recent surveys show the average income of the specialist to be somewhat greater than that of the general practitioner; but so are his overhead expenses. Far more important, the specialist's practice is more of a fair weather one, and in the last few years this country has been experiencing a prosperity—or pseudo-prosperity—which can hardly be expected to last. As has been said before, "In the dark days of depression that followed the last wave of prosperity quite a number of medical men were forced to abandon their offices for the less digni-

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Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.

fied but more lucrative job of operating a taxicab or elevator. So far as I know, none of these men were family doctors."<sup>1</sup>

Another form of security possessed by the general practitioner is the stability of his practice. "It is quite possible for a man to specialize in some particular branch of medicine, only to have his specialty vanish into thin air. Many years ago a friend of mine made a handsome living in New York by doing nothing but giving transfusions. Nowadays this is done by hospital interns, medical students, and even by well trained orderlies. There was a time when the treatment of syphilis was a source of much revenue. Now, with rapid treatment centers in operation all over the country, specialists in this field are having to look for other work. Infant feeding was once such an intricate problem that pediatricians could almost limit their work to the first three years of life. Now it has become so standardized and simplified that the Academy of Pediatrics some years ago adopted a resolution "to raise the age limit of pediatric practice to 18."<sup>2</sup>

The greatest threat to the general practitioner's security is that of national health insurance. An editorial in the *British Medical Journal* for October 1st says: "The growing unattractiveness of general practice is the most serious repercussion of the National Health Service on the development of medicine in Great Britain." The letters published in that journal since the National Health Service went into effect make it plain that this editorial is really an understatement.

3. An asset which may also be somewhat of a liability is the enforced necessity of keeping up with medical progress along all lines. It is, of course, impossible to read more than a fraction of the books and magazines that pour from medical presses, but it is possible to keep fairly well abreast of the times by taking two or three medical journals and glancing through their contents. Often the summary and conclusions are all that one needs to read. For example, if six pages are devoted to a detailed study of the effect of penicillin on herpes zoster, one need read only the conclusion that it is ineffective. The father of William and Charles Mayo insisted that they devote at least an hour a day to reading and study. Will Mayo, at least, kept scrupulous account of his reading time and made up for any unavoidable debit.<sup>3</sup>

It is, of course, impossible to keep up with all the new laboratory techniques that are used; but it is consoling to recall Francis W. Peabody's statement that, "In spite of the great contributions which the laboratory has made to clinical medicine there has been surprisingly little change in the character or number of the technical methods which are essential for good practice."<sup>4</sup> Every competent

family doctor is capable of making the routine tests which are most often used and are of most value in clinical practice.

It often requires rigid self-discipline to make the effort necessary to keep up with modern medical methods; but it is a duty owed one's patients. Medicine is an exacting mistress, no matter in what capacity one elects to serve her.

4. One of the most worthwhile assets of general practice is the ability it gives one to view the patient as a whole, rather than as a segment. Even though the family doctor may not know how to correct an error of refraction, he is able to evaluate the effect of eyestrain as a cause of headache. Years ago Dr. William MacNider used as the subject of his presidential address to the North Carolina State Medical Society, "The Balanced Mind in Medicine." The ability to keep one's mental balance in weighing the bits of evidence that go to make a diagnosis is one of the rewards that come as a result of long years spent in studying the patient as a whole. The same mental balance helps the general practitioner to estimate the influence of emotional stress on a patient. The need for the balanced mind in medicine was stated by Plato twenty-four centuries ago: "If the head and the body are to be well, you must begin by curing the soul. . . . This is the reason why the cure of so many diseases is unknown to the physicians of Hellas because they are ignorant of the whole, which ought to be studied also; for the part can never be well unless the whole is well."

A few years ago Harvard departed from its custom of having a doctor give the Gay Memorial Address on Medical Ethics, and instead invited the well known writer, Mr. Ben Ames Williams.<sup>5</sup> In the course of his address, Mr. Williams illustrated the importance of the balanced mind in medicine by telling of a patient who was first presented by a dermatologist as a beautiful case of bilateral dermatitis of the hands. Next he was used by a gastroenterologist as an example of idiopathic diarrhea. Then a psychiatrist discussed his mental symptoms. Finally, an old country doctor who happened to come into the hospital glanced at him and asked where such a typical case of pellagra had come from.

A friend of mine who had done general practice for a number of years before specializing in eye, ear, nose and throat work once confided to me that one of the things he disliked about being a specialist was having to make so many negative diagnoses; that it was much more satisfactory to say what *was* the matter with a patient than to tell what *was not* the matter.

On the other hand, the specialist must have a great feeling of relief when he can pass the buck to the family doctor. Since 75 to 90 per cent of



the general practitioner's practice is apt to be made up of problems in internal medicine, the poem published in the *Journal of the American Medical Association* for July 5th, 1947, should appeal to most family doctors. It is too long to read *in toto*, but a few extracts will give the general idea.

Pity the Poor Medical Man!

—he has no one

To whom to pass the Buck.

More than often the Surgeon from his splendid  
Leather chair dictates a note that there is  
No surgical procedure that is likely to help  
The Poor Internist's Patient.  
And the Ophthalmologist or the Otolaryngologist  
Say that the Headache is not caused by Eyestrain  
Or Sinus trouble respectively.  
And the Neurologist says bluntly, "Negative  
Neurologically."

The Gynecologist finds nothing gynecological;  
The Allergist finds nothing allergic;  
The Cardiologist finds nothing cardiopathological;  
And the Radiologist after a long-winded Dissertation

Ends by saying an essentially negative examination.

'But, doctor, if there's nothing wrong with me

Why do I have all this pain?'

'Do you think I am in the Change?'

'Would nerves do it?'

'Do you mean to say that after all this you don't

Know any more than you did at first?'

Pity the Poor Internist as he writhes in his chair!

He has no One to whom to pass the Buck.

He is the Goat.

Pity him!

5. A fifth asset of the family doctor is the tremendous *influence* he has. There is no doubt but that this is one of the most potent weapons our profession can use in its fight against compulsory health insurance. Most people feel that they can trust the advice of their doctors in political matters as well as in health matters. The abrupt halt in the trend toward government control of medicine has been due largely to the fact that people believe in their family doctors, and do not want to give up the intensely personal relationship that exists between doctor and patient. Oscar Ewing and his crew know this full well—hence the relentless propaganda, paid for by tax money, designed to destroy the confidence of the people in their doctors, and to belittle the doctor-patient relationship.

6. Perhaps the greatest asset of all is the privilege of *belonging* to one's families. The family doc-

tor is a sort of honorary member of the families that make up his practice. How many specialists know the thrill that comes of hearing themselves called with mingled pride and affection, "My doctor"? How many specialists have babies named for them—except the juniors in their own families? The family doctor has what the late Wendell Willkie called "a vast reservoir of good will," which he can draw from as needed.

Three times it has been my privilege to take part in occasions when whole communities did honor to beloved physicians. The first time was when Dr. Estus White, of Kannapolis, was given the award for being selected as the Man of the Year. The second occasion was when all of Salisbury, it seemed, came to a dinner in honor of Dr. Tom Seay, who had been selected by the North Carolina State Medical Society as its candidate for the A. M. A.'s General Practitioner Award for 1949. The third time was last December, when the Shelby Chamber of Commerce made its annual dinner a love feast for Dr. Everett B. Lattimore, in recognition of his more than fifty years of service to the community. The spontaneous outpouring of the love and admiration of these communities was worth all the trials and tribulations that these three grand general practitioners had endured. And doubtless there are scores of other family doctors who have accumulated over the years reservoirs of good will almost, if not quite, as full as did these who were so publicly honored.

7. Finally, the family doctor has the great satisfaction of *learning many things about medicine that are not in the textbooks*—many minor but important details that a specialist may never come across in his restricted practice. This satisfaction is enhanced if the doctor takes the trouble to communicate his hard earned knowledge to his medical brethren through one of the many medical journals whose columns are open to him—*Southern Medicine & Surgery* and the *North Carolina Medical Journal*, to name but two.

In a delightful little volume of letters called "The Corner of Harley Street," a description of a British general practitioner (pre-National Health Insurance era) emphasizes this asset of general practice and in so doing pays a well deserved tribute to the highest type of family doctor. I will let this description serve as the conclusion of my talk:

"He may not be able to excise a Gasserian ganglion, or know much about the researches of Calmette or von Pirquet. But he knows precisely when to call in the men who do. . . . On the other hand, upon a hundred points—little everyday problems of medical practice, unclassified ailments that have never got into the textbooks or been dignified

## One Answer to the High Cost of Medical Care

GEORGE R. WILKINSON, M.D., Greenville, South Carolina

**I**N THE ARMY the infantry has been regarded for many years as the low spot in the military field. Today the infantry has developed into a highly trained ground force with many specialties, all combined into a force of enormous striking power. In medicine, the lowly general practitioner of the first two decades of this century has budded out into the most important, most highly regarded and sought-after single division in medicine.

Many factors have combined to make this change. First of all, the practitioner is different. No longer is he the product of the diploma mill who went to school very little before entering a short-term school, started work with little or no hospital experience, and gained his footing by hard experience and desperation, working without the aid of trained nurses, perhaps doing more nursing than practice: spending long hours in travel seeing people who might just as well have come to see him, except that it was cheaper to have the doctor spend his time and gas, to save theirs—and all on credit. The underpaid, overworked, undertrained practitioner of yesterday has gone for good.

The combined effort of many agencies has standardized medical training to such a degree that now we have no poor medical schools. Candidates are screened by refined and scientific methods, to the end that by far most of those who enter the field of medicine go through to graduation, and actually practice, once they have finished training. With four years of high school, four years of college, four years in medical school, together with one to four years of hospital experience, the modern edition of the general practitioner is well able to do almost anything that comes along, and to do it well.

Teaching medicine, too, has improved. The old grind in anatomy and materia medica has been replaced with modern chemo- and biotherapy. Living and functional anatomy has replaced the cadaver. Much of the information taught by rote or force in the old days is easily explained, and understood with ease, by virtue of the premedical training. Chemistry, embryology, physics and zoology have conditioned the mind of the neophyte to the extent that he readily absorbs what in former days was learned the hard way. With years of training, the practitioner is well able to compre-

hend new methods and put them into practice, without having to be shown.

Current medical literature is greatly improved by the printers and lithographers, so that many advances are illustrated in black-and-white, and even in colors, making the contents more readily understandable. Pharmaceutical advances are rapidly distributed, both through the medical press and through well-versed representatives, who call in person. Many new ideas that he has not seen in the literature come to the doctor through the so-called detail men. This agency for the dissemination of new, and satisfactory old, methods has not been properly appreciated by the highbrows, but has been fully taken advantage of by those in the front line of practice.

Good general practitioners are the answer to the high cost of disease. Much that has been done in hospitals before can now be readily done in the office and in the patient's home. The New Practitioner knows how to multiply his efficiency by utilizing the trained nurse, technician, and office secretary. Much of the laborious work of finance, dietary instruction, rudimentary weighing, first aid, and an appreciable amount of the commiseration, in former days supplied by the physician alone, can now be well handled by carefully and personally supervised medical aides. These good and worthy co-laborers in the field all tend to reduce the costs, speed up diagnosis and treatment, and carry along a large portion of the work.

The cost of medical education is enormous. To make the cost worthwhile, the doctor must, of necessity, keep training his force, so as to spread his abilities over more people at a cost that the sick can afford. By so doing, his income is commensurate with his capital outlay, time is left over for his continued study, and the public gets a better article.

In the past, many physicians have striven to become so-called specialists, motivated by two factors in particular: first, to be able to do better work, and, second, to make more money. At times physicians have been known to go into the various specialties because they were physically handicapped, and could not stand the rigor of general practice—and, at times, because they were too lazy. Today the specialist, with his high rent and constantly increasing overhead, is out of luck, compared to what a general practitioner can get out in the sticks and earn. While medical fees have not increased as much as other commodities, the ability of the working man to pay has swelled

the coffers of the willing and earnest practitioner.

It is extremely important, on the economic side, for practitioners to re-invest a sizable part of their earnings in their own business. In too many instances the investment is made in fine automobiles, but more frequently one sees well equipped offices, with instruments of precision and other addenda, all of which facilitates practice, to the end that few need to be referred to those limiting their practice.

Economically, the family physician is more secure than any other single division in the practice of medicine. He is more appreciated by the public now than ever before. If the profession of medicine is to regain and maintain the confidence and esteem of the public, it will be through the family physician. It is no longer customary for a doctor to bow his head and admit that he does general practice. The time has arrived when he can hold his head up, look the rest of the profession in the eye, and say, "I'm a *regular* doctor. What do you do?"

#### SUMMARY

1. The practitioner of today is a well trained physician, and is ready to do good work from the start.

2. The present-day doctor multiplies his effort by the use of many subalterns who are well trained to do their work.

3. The public is well served in the office, home, and clinic by one doctor for the vast majority of diseases.

4. The family doctor is, economically, more secure than are the members of any other group in medicine.

5. *A good general practitioner is the real answer to the high cost of medical care.*

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#### ASSETS—From p. 142

with a Latin name, . . . there isn't a man in Harley Street who could give a more valuable opinion. . . .

"Such men are not only the pillars of our profession, but its topmost pinnacles."<sup>16</sup>

#### SUMMARY

1. A distinction is drawn between the family doctor and the general practitioner.

2. Among the assets of general practice are (1) a goodly heritage, (2) security, (3) the enforced necessity of keeping up with medical progress in all fields, (4) the ability to view the patient as a whole, (5) the general practitioner's influence in his community, (6) the privilege of belonging to his families, and (7) his knowledge of many things that are not in the textbooks.

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#### Discussion

W. S. DENDY, M. D., Pelzer, S. C.:

MR. PRESIDENT, Members of the Tri-State Medical Association, and Visitors. I appreciate Dr. Wilkinson asking me to discuss his paper, and the privilege of appearing before you gentlemen (my favorite organization). Though I am not a fluent speaker, I feel well qualified to discuss this subject, because of following in the footsteps of my father who did general practice for 50 years, and having done general practice for 25 years in this same mill community where I was born and reared, I can testify that general practice of today is quite different from what it was in my father's day, even from what it was when I first entered on the professional care of my people.

I had the opportunity to specialize in any branch of medicine I would choose, but knew I would be happy only in general practice in my home town.

The general practitioner of today is well qualified. Those who were graduated along with me, and who made any endeavor to learn from their experiences—and that takes in all but a very few—can cope in diagnosis with those recently turned loose by the hospitals, and we have no difficulty in putting to appropriate use the marvelously potent remedies that new discoveries have placed in our hands. When I first started, 25 years ago, I had a blood-pressure instrument, a stethoscope, a bag of pills, and an automobile. Consultation with specialists at that time was difficult. Hospital facilities were poor, and it was a problem to get a patient to consent to hospitalization.

After the 25 years of greatest progress in the general practice, I now have a small clinic well equipped with everything that modern science has to offer in general practice and obstetrics, and only a few miles away is a large, well-equipped general hospital where any complicated cases of mine are welcomed and taken care of in a first-class fashion.

We general practitioners realize our important position in the field of medicine. We appreciate and attend the fine Post-Graduate Seminars offered by the various medical centers, so as to keep ourselves competent to serve our people in accordance with best medical practice. We have also organized the American Academy of General Practice, so that we may maintain an even higher standard in our profession and, incidentally, get a little recognition.

We have passed the age when we purge, puke and bleed the patient. We diagnose them correctly, and treat them scientifically.

If unable to make a diagnosis, we say allergy, or virus.

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#### HYPERTHYROIDISM—From p. 135

Final diagnosis rests upon exploration of the neck and the pathologist's confirmation of a parathyroid adenoma or hyperplasia or hypertrophy.

Results are often dramatic, complete recovery of the skeletal system, and the ultimate prognosis depends primarily upon the degree of renal damage which has been brought about.

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A good way to widen out the straight and narrow path would be for more people to walk on it.



# DEPARTMENTS

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### PRIVATE HOSPITAL SERVICE VERSUS GOVERNMENT HOSPITAL SERVICE

WHAT sometimes starts out to be a good move or venture on the part of an individual, a politician or an institution winds up by being the most impractical invention imaginable. To the writer, one of these adventures that has turned out to be impractical is that of government hospital service. No one would deny that the returned soldier should have the best care obtainable, and in the beginning the government thought the veteran would get better service in the Veterans' Hospital, and that it would be more economical.

One can always be forgiven for trying something new, for it is only through such ventures that progress is made. The sad part about the hospital situation is that facts have not been faced and attempts have not been made to determine whether the objects for which the veterans hospitals have been built have been accomplished. It seems evident to everyone, except those whose responsibility and duty it is to correct the inadequacy, that it is costing too much for too little service to the sick or disabled veteran. If someone could get the true picture before the public, the author is confident that public opinion would make a drastic change in the procedure for rendering service to the veteran.

For many years the lay public has over-indulged the medical profession in deciding medical questions. We should be grateful for this honor and confidence, but face the fact that it has not always worked to the common good. For the same number of years the lay public has not credited us with having the faintest idea of economic matters, and therefore, have withheld all positions of financial authority in the Veterans' Medical Administration. This does not mean that in no instance has an M.D. been appointed to such a post, but almost all such appointees have been either politicians as well as M.D.'s or men who have been in the employment of the Federal Government for many years.

The author does not pretend to know all the many different types of politicians; but he knows their recklessness in spending the other fellow's money, and how seldom they get a dollar's—or even half-a-dollar's—worth for a dollar expended. Having had some experience in spending the taxpayers' money, the author recognizes the difficulty in spending public money wisely.

The Veterans' Hospital cost per patient, per day, including building, maintenance, etc., far exceeds that of any non-government hospital. It is seriously doubted whether or not there is any individual in the Government, at Washington or elsewhere, who knows how much the cost per patient, per day, is. However, a simple-minded individual can figure out that the millions and millions of dollars spent for building new hospitals, and buying new equipment, to be closed and abandoned when they are in the height of their efficiency, is silly beyond words. No possible stretch of the imagination would give one the faintest excuse for closing the government hospitals over the country, salvaging from 15 to 20 per cent only of what they cost, and then building new hospitals on a cost-plus basis to take the place of those closed.

The writer asserts without fear of being contradicted, that the U. S. Government could take care of the sick and disabled veterans and their dependents, in the private hospitals, at a cost not more than one-fifth of the present per patient, per day cost, and that the veterans would be better satisfied, and be sooner returned to a useful productive life.

It is high time the thinking people of the country should show—at the polls and elsewhere—their resentment of the orgy of waste of the money taxed out of our pockets. It is high time that the veteran and his dependents should be given first-class medical and hospital attention, by those who love him and his family for what they are in the community and for what they will be in the community when they get well. It is a silly absurdity to expect patient No. 999 with a serious crippling ailment to recover more quickly, more completely and with less discomfort, when treated by doctor No. 555 in hospital No. 619, than when treated by Dr. Sam Jones in the nearby General hospital.

Those inclined to disagree are simply asked, Have you ever had a good, old-fashioned family doctor?

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### RECURRENCE OF HERNIA

THE REPAIR OF INGUINAL HERNIA is often taken too lightly and in so doing the principles of sound surgery are disregarded, thus accounting for the high incidence of unsatisfactory results. Koontz<sup>1</sup> recognizes four factors concerned in the recurrence of a hernia repaired by any approved method. Mentioned first is that of leaving areolar tissue on important structures which are to be sutured together; a fascia to fascia approximation is necessary for a firm union. Suturing under tension is to invite failure, as by pressure necrosis the sutures cut

through the tissues. An incision in the sheath of the rectus muscle generally obviates this difficulty. The next factor—that of using absorbable suture material—may be controversial, as many hernias have been satisfactorily repaired with catgut. However, the author is considering failures and not successes. There is an abundance of evidence to support his position that absorbable sutures cannot be relied upon to hold the structures together until fibrous union has taken place. The fourth factor is that of suturing tissues of poor consistency. To overcome this difficulty it is recommended that the closure be reinforced with a piece of tantalum mesh.

1. Amos R. Koontz, *J. A. M. A.*, 1949, 141:366.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### SOME DIFFICULTIES IN THE DIAGNOSIS OF CORONARY ARTERY DISEASE<sup>1</sup>

IN THE majority of cases the diagnosis of coronary artery disease is little difficult. An x-ray picture of the heart is no help in the diagnosis of angina pectoris. An ECG is usually of no help at all. A painstaking history is practically the court of last resort.

Walking is particularly apt to bring on the pain of true angina pectoris, especially in cold weather. Emotional outbursts by speeding up the heart and increasing its O requirements are apt to bring on the pain. The primary pain is apt to be substernal rather than precordial or on the left, and radiates up the neck and down the arms. Pain in the region of the apex of the heart is almost never angina pectoris.

What could this pain be besides angina? In youth neurocirculatory asthenia is an extremely common cause of pain or discomfort in the chest. Ordinary constipation is a frequent cause of upper abdominal or lower substernal pain and discomfort; in such cases, abolition of cathartics and substitution of liquid petrolatum until normal bowel habits are reestablished will generally afford ready relief.

A number of cases of peptic ulcer are misdiagnosed as angina pectoris; likewise chest deformities of various sorts, particularly funnel chest, arthritis or scoliosis of the spine, occasionally in the lower neck but most frequently in the upper or midthoracic region. Probably all the pain of scoliosis and of arthritis results from spasm of muscles in the neighborhood of the lesion. It is apt to occur when the spine has remained in one position for a long time, either upright or recumbent; apt to occur the day following exertion. It is brought on by motions which bend the spine, not by walking. X-ray examination of the spine will nearly always disclose the lesion.

1. J. A. Boone, *Charleston, in JI. S. C. Med. Assn.*, Jan.

As to angina pectoris, ask first "what else it might be?"; in apparent coronary thrombosis, treat as coronary thrombosis until proved otherwise. Severe chest pain, followed by fever and leukocytosis and increase in sedimentation rate after 24 to 48 hours is sufficient to make the diagnosis. In a few cases lack of atypical nature of symptoms make diagnosis much more difficult. A relatively symptomless coronary thrombosis frequently precedes the development of otherwise unexplained heart failure. Or the occurrence of arterial emboli may be traced back to a recent coronary thrombosis. A considerable number of ECG diagnostic of coronary thrombosis are found in records of cases of ordinary hemiplegia. It must be remembered that there is great variation in the time between the occurrence of coronary thrombosis and the appearance of eeg. changes. Most will show within a day or so, others do not appear before a week or more. Multiple chest lead ECG are helpful in some cases which are not clear in the usual leads; whatever leads are used it is important to repeat them at intervals of few days in doubtful cases.

Many a case of pulmonary embolus is very difficult to differentiate from coronary thrombosis, particularly since in the majority of cases the ECG resembles strongly that of coronary thrombosis. In the majority it confuses more than it helps. Look for some basis for the occurrence of pulmonary emboli, such as thrombophlebitis, a recent abdominal operation. Pulmonary embolus causes considerable distress, dyspnea and shock rather than pain and shock of coronary thrombosis. Mediastinal emphysema or partial pneumothorax will give an ECG resembling that of coronary thrombosis, particularly if air gets into the pericardial sac.

Usually some excessive physical exertion or coughing precedes these symptoms and dyspnea is apt to be a feature. Crepitus from emphysema may be discovered on listening over the chest and the x-ray is diagnostic of both lesions. A severe strain or fracture of a spur or bridge of osteoarthritis often gives a picture of coronary thrombosis. This is usually preceded by some unusual motion of the spine and an x-ray of the spine will disclose the causative lesions.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### SIGNIFICANCE OF THE FETAL HEART RATE

AUSCULTATION of fetal heart tones yields important information from early pregnancy to birth.

The most serious indication of fetal anoxia is a persistently slow or irregular beat. Before the rate drops to 100, the baby should be delivered by the

most rapid method feasible. Transient tachycardia may be unimportant, but a progressively *high* rate is sometimes the earliest signs of abruptio placenta or other hazard.

When a fetal heart beat is not audible and the uterus is enlarged, fetal death, hydatiform mole, multiple pregnancy, uterine tumor, or spurious pregnancy should be considered.

Fetal heart tones are usually heard by the 18th week of gestation, occasionally as early as the 14th, the rate about 150 per min. The sound is generally audible in the midline just above the bladder.

The rate in late pregnancy is 120 to 170 and at sometime in the last two months commonly is 160 or more. Fetal activity or manipulations of the child's head during abdominal palpation, vaginal, or rectal examination may change the rate. Tones are obscured by obesity, loud maternal pulse and polyhydramnios.

Uterine contractions during sedation, or drop in maternal blood pressure during spinal anesthesia may reduce the rate. Rates up to 170 or 180 are no cause for alarm if labor pains are not unduly strong or close together and if the tachycardia does not last more than 20 minutes. Transient acceleration of beat may result from fetal movement, application of forceps, pressure of the head on the perineum, uterine contraction, or rectal or vaginal examination.

Premature separation of the placenta may be revealed before onset of hemorrhage by persistent, pronounced tachycardia. As the area of placental attachment is reduced, fetal circulation accelerates until asphyxia occurs and the heart rate finally falls.

Slow rate may indicate other causes of fetal O deficiency—a short or knotted cord, a loop around the neck, or prolapse. Irregularity lasting one-third to one-half of the interval between contractions usually indicates constriction of the child's neck. If irregularity continues throughout the interval, the baby is threatened by asphyxia. Operative vaginal delivery should never be attempted unless all accepted conditions for the operation are present.

If the heart tones indicate fetal distress in the first stage of labor, vaginal delivery is seldom feasible and cesarean section may be necessary, especially if the mother is an elderly primipara, there is cephalopelvic disproportion, or the cervix is rigid.

Late in the first stage emergency delivery may be possible by either of two vaginal procedures. If the cervix is not completed dilated, Dührsen's incisions may be performed, or the mother may be urged to aid her contractions if, by so doing, delivery can be produced in a short time. O should be administered; saddle-block anesthesia should not be used in such cases.

1. L. M. Abraham & Isadore Dyer, New Orleans, in *N. O. Med. & Surg. J.*

With fetal distress in the second stage of labor, delivery should be done at once by the least traumatic method. If the mother is a multipara, with no cephalopelvic disproportion, and the head is too high for forceps, version and extraction are done. With breech presentation immediate extraction is done.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### TREATING BLOOD DISORDERS

KRACKE<sup>1</sup> speaks with authority:

Iron deficiency anemias should be treated with ferrous sulfate; if patient cannot tolerate as usually given, give in small divided doses, spread over a great many hours each day. Liver extract is the treatment of choice for patients with pernicious anemia; folic acid only when liver extract causes severe reactions. Folic acid is best for the megaloblastic anemias—sprue, pellagra, nutritional deficiencies, anemia of pregnancy and infancy, and for achrestic anemia.

Vitamin B<sub>12</sub> may soon alter the treatment of the megaloblastic anemias, prove the hematologic contribution of the year. There is evidence that B<sub>12</sub> is of value in arresting the cord changes of pernicious anemia. With folic acid it may prove the treatment of choice in pernicious anemia. For the present continue to use liver extract.

In the treatment of chronic leukemia our basic dependence is still radiation. New agents promise better results.

In our clinic we have treated nearly 60 patients with urethane over a period of two years and have been highly gratified with the results—a rather prompt fall of leukocytes to normal levels, disappearance of immature cells from the peripheral blood, and improvement in the bone-marrow picture. Patients have been maintained for many months in a state of satisfactory clinical remission by the use of urethane alone. This drug makes it possible to defer radiation until much later and thereby puts off the evil day when the patient may become radiation resistant. An occasional patient with chronic leukemia does not respond to urethane at all.

During the past eight months we have given aminopterin to 28 patients with acute leukemia, six of whom were practically moribund on admission. Of 22 who received the treatment for two weeks or longer, nine are living; two of the first four patients treated are in a state of satisfactory clinical remission. Aminopterin does prolong the lives of half the patients with this disease and gives hope for the management of this hitherto entirely hopeless disease.



There seems little promise for the control of the leukemic state by the radioactive isotopes, although radioactive phosphorus, has been found effective in polycythemia vera.

The value of nitrogen mustard has been demonstrated in Hodgkin's disease.

No substantial progress has been made in the therapy of the purpuric disorders.

Agranulocytosis is seen rarely—caused by certain drugs as aminopyrine, any of the sulfonamides, thiouracil, propylthiouracil, gold salts, organic arsenical compounds, and perhaps atabrine, tridione, and mesantoin. Thiouracil has caused a substantial number of cases, but the less toxic propylthiouracil will also cause agranulocytosis.

There is no evidence that pentnucleotide or other agents that have been recommended for the control of neutropenia have any efficacy.

Stilbamidine appears to have some usefulness in the control of multiple myeloma. The same is true of urethane.

1. Roy R. Kracke, Birmingham, in *Modern Md.*, Mar.

## CLINICAL NEURO-PSYCHIATRY

### ELECTRO-COMA THERAPY: A SIX-YEAR FOLLOW-UP REPORT

WE hear and read much about electric-shock treatment, but little about ultimate results. Many will be interested in a report on a follow-up study of 100 private psychotic patients treated with electro-coma therapy in 1941-1942.<sup>1</sup>

Eighteen patients, chiefly schizophrenics and some with involutional melancholia, either did not progress to full recovery, or relapsed soon after the initial improvement. Some were quite well for months or several years and then regressed. This group is considered failures. Many of these were chronic cases which were treated only at the request of an insistent family.

Several chronic schizophrenics have improved with electro-coma therapy and have maintained apparently normal health over a period of seven years.

Eighteen patients showed partial improvement. They have maintained a fairly satisfactory social and industrial status.

Sixty patients showed a successful response to electro-coma therapy. Thirty-eight of this group have maintained well-being for the entire period of six to seven years. Twenty-two improved, but had recurrences at later dates, to clear up with additional courses of treatment. The successful cases consisted largely of depressed patients and several

1. J. L. Fetterman, et al., in *Ohio State Med. J.*, March, 1949.

manics. However, there were several schizophrenics among them. There was no instance of epilepsy or death as a complication of electro-coma therapy.

In the large group of patients who were closely followed over a period of years, no instances of mental deterioration were encountered. The 60 patients who are grouped as successfully treated consist of men and women in all walks of life who are maintaining or advancing in their jobs and careers, and in their social living.

The present technique is considerably improved over that employed in 1941 and 1942. The improvements consist of pretreatment medication, smaller doses of electricity and particularly ambulatory electro-coma therapy.

An extensive experience during the recent three years, as well as in 1941 and 1942, heartily endorses the value of ambulatory electro-coma therapy. We stress the importance of a sincere psychiatrist, trained in electro-coma therapy, rather than the need of hospital walls and hospital atmosphere. The man is more significant than the masonry.

## HUMAN BEHAVIOUR

REX BLANKINSHIP, M.D., Editor, Richmond, Va.

### MAN DEFENDS HIMSELF

IN the present era, with its sensational "advances" in medicine—some truly marvelous, some high questionable—a balanced judgment is as welcome as it is needed. A doctor who has seen a lot and meditated wisely on what he has been,<sup>1</sup> reminds of the natural history of disease.

Too many "scientific" medical men have forgotten that man, unaided, is able to resist disease successfully. It is certain that more than 25 per cent of all syphilitics cure themselves of their disease without the aid of treatment of any kind. Heat alone, by increasing man's resistive power, will cause the disappearance of skin lesions, bone involvement, visceral complications, and neurosyphilis. The percentage of clinical cures in all types of syphilis is no greater than it was by the old method of 72 weeks of continuous treatment. The advantages of penicillin have been the reduction of the time element of treatment and the prevention of many new infections because those infected with early syphilis did not have the time to make the rounds as they formerly did. Almost any kind of treatment will cure 25 per cent of those infected with syphilis: 25 per cent more are cured by a moderate amount of therapy; and 25 per cent are not cured by any means now known to us. This last 25 per cent Dennie<sup>1</sup> divides into four groups: specific therapy, the therapy of empiricism, the therapy of desperation, and the therapy of frustration.

1. C. C. Dennie, Kansas City, Mo., in *Penn. Med. J.*, March, 1949.

Specific therapy: Penicillin will cure 93 per cent of cases of seronegative syphilis. It is a true specific in the treatment of infantile syphilis and the syphilis of pregnancy, but as the age of the syphilis progresses the efficiency of penicillin decreases. In studying a series of 10,000 treated cases intimately, one finds that something can be done for the 25 per cent who are not cured by penicillin alone or by penicillin combined with other methods of treatment.

The ideal course in early syphilis of all types would be (exceptions noted): 6 to 8,000,000 units of penicillin; three heat treatments—three hours each—at a t. of 106° F.; followed by 10 weeks of treatment consisting of two doses of arsenoxide and one of bismuth, weekly. To those in whom the serologic response is not favorable, an additional 10 weeks of treatment should be given with an additional three heat bouts.

In neurosyphilis of all types the report should make a distinction between paresis sine paresi, paresis, taboparesis, tabes, and neurosyphilis of other types.

Dennie has seen certain types of acute paresis made worse by the initial treatment with penicillin. He favors a course of sodium iodide intravenously and bismuth intramuscularly, with a few heat bouts before, the penicillin treatment is instituted, and sandwiching in heat bouts together with sodium iodide intravenously and bismuth intramuscularly, between many courses of penicillin. The high initial good results tend to slip rapidly backwards to as low as 25 per cent, whether penicillin or the older methods are used in the treatment of neurosyphilis. Penicillin is a *Spirochaeta* killer, but has no power of stimulating the defense mechanics of man. It is beneficial in early involvement of any part. When syphilitic disease is old, the invading organisms are few, but the wreckage of cells and tissues is great, and against this penicillin has no action. *Heat* in some form is the greatest single aid in stimulating the human organism to clear away this wreckage. The administration of iodides assists.

Dennie regards it as entirely within the range of scientific possibility that a drug can be produced, measured, and administered in quantities that will produce the desired rise of temp., sustain it for the required four to six hours, and then allow the t. to drop to normal without injury to the patient. Heat has had astounding success in many cases.

The second phase is the development of a new antibiotic or a new drug which has the power not only of stimulating the defense mechanism, but also of destroying the offending organism. This is the ideal remedy. Some of the most desperate cases of paresis have responded to heat and malaria, while others with milder manifestations have

proved fatal. These two extremes show that the strength of man's natural defense was underestimated in the one case and overestimated in the other.

By the therapy of frustration is meant, not frustration in the patient, but frustration in the doctor. Thus psychosomatic medicine was born. The soothing of the disturbed psyche is the oldest form of medicine known to man. Before any considerable percentage of medical men were aware that psychosomatic medicine has a large place in the entire picture, the patent medicine faker cured many of his patients, not by his medicine, but by the impact of his personality. Religious groups with therapeutic aspirations flooded the land. The trouble with all of these groups was their success. Their failures were due to the spread of their ideas to all diseases.

Gradually we are beginning to be aware of the fact that an iron curtain has been drawn in medicine and that each successive step demands investigation behind yet another curtain. Thyroid disease with exophthalmos is now considered to be a complicated disease wherein the pituitary stimulates the thyroid; it in turn is stimulated by the hypothalamus and the hypothalamus got that way through some shock to the psyche. It is thought in certain quarters that diabetes is not primarily produced by withered cells in the pancreas but by impulses from the pituitary gland which burned out the secreting cells, and that the pituitary is governed by certain portions of the brain, which in turn are disturbed by injury to the psyche. Since no other cause can be ascribed for the production of gastric and duodenal ulcers they are beginning to be ascribed to the disturbed psyche. One psychiatrist has become famous because of her observations that fat people are sad because they are fat and fat because they are sad.

The psychosomatic physician has marvelous success in curing or at least in reducing the stimuli that disturb the psyche, but the vast majority of visible detectable diseases of the soma are but little affected by correcting the ills that torment the psyche.

Intractable cases of urticaria sometimes disappear when irritating substances are removed which disturb the psyche, but the author has had considerable success in making a complete physical examination, examining the stomach for absence of hydrochloric acid, and examining the feces for the presence of parasitic ova, together with a well-controlled elimination diet.

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FAILURE OF HYPNOSIS IN LABILE ESSENTIAL HYPERTENSION  
Alfred Lane & Arthur Ruskin, Galveston, in *Texas Reports on Biology & Medicine*, Spring, 1950)

In seven deeply hypnotized hypertensive patients we failed to influence the blood pressure downward in repeat-

ed half-hour sessions, during which relaxation suggestions and posthypnotic suggestions were constantly and apparently successfully made. Definite hypotensive effects were noted in the same patients following natural sleep, sleep following deep hypnotic trances, and sodium amytal and etamon tests.

## GYNECOLOGY

RACHIEL D. DAVIS, M.D., *Editor*, Kinston, N. C.

### PROPIONIC ACID IN THE THERAPY OF MYCOTIC VULVOVAGINITIS

GENTIAN VIOLET, 1 per cent aqueous solution, is the most popular of the many remedies for mycotic vulvovaginitis. The results of the use of this remedy are uncertain. A study of the vaginal flora in the normal female, culture yielded yeast-like organisms from 32 per cent of 114 obstetric patients, and 14 per cent of 100 gynecologic patients. Studies of pregnant women showed positive results in from 15 to 33 per cent of white, and 41 per cent of colored, females. In non-pregnant patients the incidence was 7 to 16 per cent. In a similar study, positive vaginal yeast cultures were made in 40 per cent of 112 patients.

These studies by Suran and Greenblatt<sup>1</sup> are supplemented by further studies of the same doctors.

In a series of 232 obstetric patients, positive cultures were obtained in 56 per cent of 48 women with vulvar irritation; 32 per cent of 184 patients without vulvar complaint. Adult diabetic patients without vulvitis showed 12.5 per cent with positive cultures, whereas 95 per cent of the diabetics with vulvitis were found to harbor the yeast-like organisms.

Any patient complaining of vulvar or vaginal irritation, with or without a discharge, should arouse the suspicion of the presence of trichomoniasis or mycosis. Microscopic examination under the high-powered dry lens, of a fresh smear or hanging-drop preparation of the vaginal secretion, may reveal the pathogenic agent. The finding of trichomonads in the discharge should not deter the physician from further search for the yeast-like organisms. When both organisms were present in the discharge, elimination of the fungus relieved the irritation, although the trichomonads remained in considerable numbers. The mycelia and conidia may be readily demonstrated by staining the smear with Wright's or Gram's solutions. The fungus is strongly gram-positive. When the smear fails to reveal the organisms, the vaginal secretions should be cultured in Sabouraud's or other media.

A simple method of culture used by us has yielded a high percentage of positive results. The vagina is swabbed with a sterile swab stick prior

to pelvic examination. Using sterile technic, the swab is inserted into a sterile test tube containing a few c.c. of normal saline, twirled around several times in order to inoculate the saline with the vaginal secretions, and then removed. The swab may be used to prepare a fresh smear, and immediate examination made for trichomonads and yeast-like bodies. The cotton-plugged test tube is allowed to remain at room tem. for 48 hours. An unstained smear is searched for the yeast-like bodies, and the branching, thread-like mycelia. Staining the smear with Wright's solution will reveal the basic-colored mycelia, and yeast-like bodies. When the 48-hour culture fails to reveal the organisms, the tube is again set aside, and reexamined at the end of one week.

Patients with yeast-like organisms were given one or two tubes of jelly containing propionic acid, and calcium and sodium propionates,\* with applicator similar to that used for the delivery of contraceptive jelly into the vagina. The capacity of the applicator was about 10 c.c. The patients were instructed to deposit the jelly in the posterior fornix, one applicator-full each night before retiring, and to take a soda bicarbonate douche the following morning until the contents of the tube, or tubes, had been used, and then return. Additional tubes of jelly were given to those whose symptoms persisted, and those whose cultures were positive on reexamination.

During the past six months cultures were taken on 120 private patients with subjective or objective evidence of vaginitis—positive cultures in 50, only 37 are eligible for report. Symptomatic relief was obtained in all but two of a series of 27 patients. Complete cure of the infection, as proved by culture, was obtained in 50 per cent of the pregnant, and 34 per cent of the nonpregnant patients. This method of therapy is convenient to use, does not soil the clothing, and removes the necessity of frequent visits to the physician.

\*Jelly supplied through the courtesy of Wyeth, Incorporated, in the form of "Propion Gel."

### MANAGEMENT OF OCCIPUT POSTERIOR POSITION

(C. L. Goodhand, Parkersburg, in *W. Va. Md. J.*, April)

Thirty-six cases of persistent occiput posterior in 700 consecutive deliveries are reported—an incidence of 5.1 per cent. The vast majority of cases that begin labor as occiput posteriors will rotate spontaneously to the anterior, and deliver with comparative ease.

Cases of great disproportion between the baby's head and the mother's pelvis, with persistent non-engagement of the head should be delivered by cesarean section, preferably low-cervical or extraperitoneal in potentially infected cases.

Persistent occiput-posteriors should be allowed to continue in second stage labor for variable lengths of time, depending upon the progress being made, and the condition of mother and baby. A minimum of two hours should be allowed unless there is some contraindication.

1. R. R. Suran & R. B. Greenblatt, Augusta, in *Jl. Med. Assn. Ga.*, March, 1949.



Adequate rest for patients having long labor is imperative, as is also the maintenance of the proper state of hydration. Manual rotation of the occiput to the anterior is the method of choice, if possible, when interference and rotation becomes necessary, this followed by forceps. Forceps rotation will probably be found necessary in a smaller number of cases.

A fair percentage of patients may be delivered as occiput posteriors with comparative ease and greater safety, especially in that group of patients in which the occiput reaches low pelvis as a posterior. A trial with low forceps will tell the story. An episiotomy is usually indicated, especially in the primigravida.

The number of cases of persistent posterior occiput will be held to a minimum if the rule to allow reasonable duration of the second stage is strictly followed.

## DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

### MEDICAL-DENTAL SEMINARS

We are publishing in this issue of the Journal<sup>1</sup> the program of the Medical-Dental Seminar which is to be conducted soon by the Rhode Island State Dental Society at Providence College. This is a continuation of the excellent work started last year when this same Society had a series of six lectures at Brown University given by eminent visiting physicians. Last year's lectures were received enthusiastically.

This work is highly to be commended and it has been given high praise by the state of Connecticut. That is—they are imitating it. There is going to be this month a program at New Haven consisting of five lectures on mouth conditions. These lectures are sponsored jointly by the Connecticut Medical Society and the Connecticut Dental Association.

Probably in the past the average dentist has not known a great deal of general medicine, and it is probably just as certain that the average physician has known mighty little about the significance of abnormal conditions within the mouth. Both groups cannot help being benefited if they will take interest in these coming series of lectures.

It is highly proper right here that we should pay a compliment to the forward looking attitude of the dental group in this state. Their annual meetings have been of a high character for years and an increasingly large number of their members are demonstrating that they want to be much more than narrow specialists. It is difficult for a specialist to take wide views. We cannot help but feel that in our own profession it is much more difficult than was the case in the past, when nearly all our specialists came up through general practice.

Among the subjects to be presented in the Seminars are:

"Recent Advances in Antibiotic Therapy of Importance to Physicians and Dentists;" "Neurophy-

siology, Diagnosis and Treatment of Pain in the Face, Mouth and Adjacent Regions;" "Common Interests in Pediatric Psychology for the Physician and Dentist," and "The Diagnostic Importance of the Tongue and Oral Mucosa."

Such joint programs for mutual instruction on health matters on the borderline between medicine and dentistry or as to which the responsibility of the two professions overlaps, must, of necessity, be productive of improvement in patient care and in the relationship between the two professional groups having in their hands the health care of the people.

The courses being arranged for the new School of Dentistry and the School of Medicine of the University of North Carolina are being closely correlated, the teaching of the first two years being much the same in the two schools.

The details are being worked out and it is anticipated that the first class of 40 dental students will be admitted this fall.

## PEDIATRICS

ALBERT M. EDMONDS, M.D., *Editor*, Richmond, Va.

### STUDIES IN PANCREATIC FIBROSIS\*

THE NUMBER of cases of pancreatic fibrosis recognized by the clinician has increased many fold in the past 10 years. That this disease is not an uncommon one is attested by the fact that over 70 patients with pancreatic fibrosis were seen during the past year in this clinic. Marked reduction, in some cases to zero, of enzyme activity of aspirated duodenal fluid makes the diagnosis provided local conditions such as pancreatic-duct obstruction, congenital anomalies or involvement of the pancreas by syphilis or hemochromatosis can be ruled out. The assay of duodenal fluid for *trypsin* by its action on a gelatin substrate is adequate for diagnosis, inasmuch as the amount of trypsin may be taken as an index of the amounts of *lipase* and *amylase*.

In the past duodenal drainage has been the only procedure for establishing a diagnosis for pancreatic fibrosis. Many attempts have been made at quicker and easier means, the last being examination of the stool for trypsin, by either a test-tube or a gelatin-film method. The former is the more reliable, but the latter offers the advantage of simplicity and convenience and can be used as an office test.

A 1/5th dilution is made by adding feces q. s. to 4 ml. distilled water in a test-tube with graduation mark at 5 ml. Further dilutions are made as desired.

\*Abstract of article by Harry Schwachman, M.D., et al., in *Pediatrics*, Aug., 1949.

1. Editorial in *R. I. M. J.*, Mar.

Technique of the gelatin-film test: Place one large drop of the well-mixed specimen on an unexposed, unfixed gelatin film, clipped to a card-board to prevent curling. Incubate at 37° C. for 1 hr., or at room t. for 1½ to 2 hrs.

Wash in a stream of cold water with gentle rubbing.

Clearing at the site of the drop indicates enzyme activity—complete clearing 4-plus; slight, and only at the periphery, 1 plus. If the drop is small or the concentration too great, the material will dry and cake.

The results have been satisfactory, particularly in the younger children—those in which pancreatic fibrosis is most frequently encountered. Trypsin has been found in the stools in 95 per cent of those under 2 years not having pancreatic fibrosis, and in 88 per cent of those between 2 and 5 years.

The test was negative in 22 of 29 cases of pancreatic fibrosis in children under 2 years of age.

Proteolytic activity in the feces might arise from many sources, including ingested foods and drugs, gastric pepsin, pancreatic and intestinal proteases, and intestinal bacteria. The two foods possessing proteolytic activity in the pH range of the normal stool are pineapple and honeydew melon. Commercial pancreatin will also result in a stool possessing proteolytic activity.

Since normal urine contains a protease which will liquefy gelatine, care must be taken that the stool be not contaminated with urine.

Two groups were studied: a) 500 healthy or ill of conditions other than pancreatic fibrosis, and b) 50 patients with pancreatic fibrosis. In group "a" less than 5 per cent of the infants lacked this proteolytic power. The percentage in older groups was greater.

A total of 220 stool specimens were examined from members of group "b." In 209 of these specimens there was no tryptic activity.

Three separate stool examinations by this test in infants are proposed as sufficient either to rule out or to make the diagnosis probable pancreatic insufficiency; and whenever doubt arises duodenal intubation is indicated.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### PHYSIOLOGIC PRINCIPLES IN THE TREATMENT OF PEPTIC ULCER

There are still many undecided points as to the prevention and care of peptic ulcer. Grossman<sup>1</sup> calls attention to certain principles which go far to explain inadequacies.

1. M. I. Grossman, Chicago, in *Cin. JI. of Med.*, July.

The aims of ulcer therapy are: 1) To control the symptoms, 2) to do away with the ulcer either by causing it to heal or by cutting it out, and 3) to prevent a recurrence of the previous ulcer or the development of a new one.

Acid is the only factor we now know to play an indispensable role in ulcer formation. This does not mean that excessive acid secretion is the cause of ulcer. We attempt to reduce gastric acidity and to increase the resistance of the mucosa to attack by acid. Both drugs and foods are used as antacids. Neither is highly efficient. On standard Sippy management 25 to 50 times as much antacid is given as would be required to neutralize the total daily output of HCl. Still, complete neutralization is rarely achieved.

Antacids should be given once an hour, or by continuous intragastric drip. Two new antacids now on wide trial are protein hydrolysates and ion-exchange resins. There is no indication that predigested protein is better utilized than native protein by the ulcer patient. Neither of these materials is as good an antacid as calcium carbonate or aluminum hydroxide. The only obvious advantage they offer is that they do not cause constipation—a frequent accompaniment of aluminum or calcium antacid therapy.

Neutralizing acid already secreted is difficult and inefficient. In most ulcer patients atropine significantly reduces, but rarely abolishes, acid secretion. In some it fails to inhibit. Atropine also reduces the rate of gastric evacuation, and by keeping the antacid in the stomach enhances its effectiveness. In doses sufficient to inhibit secretion it causes xerostomia and cycloplegia.

Searching for a synthetic drug that will strongly inhibit acid secretion by the stomach Grossman tested more than 300 compounds, including antihistaminics, without uncovering a promising one.

Biological extracts, as enterogastrone, are highly potent gastric secretory inhibitors. None of these is effective in inhibiting gastric secretion unless given intravenously and none pure enough to be given by this route to humans.

Enterogastrone prevents formation of ulcer in doses too small to reduce acid secretion. The suggestion comes up that the treatment produces an increase in the resistance of the mucosa to attack by acid.

### TREATMENT OF PLANTAR WARTS

A BETTER way of dealing with warts is always welcome. Here is what Blank<sup>1</sup> says about the removal of plantar warts.

PARE DOWN each wart as much as possible with a scalpel. Touch a drop of 90 % phenol to the top of the wart with a fine wooden applicator. Apply fuming, concentrated nitric acid directly on

top of the phenol-treated area. This painless technic is carried out at five-day intervals until there is disappearance of the ring marking the wart.

1. Technic of H. Blank, *Arch. Derm. & Syph.*, 56:459, '47, via *Clin. Med.*, June.

## UROLOGY

RAYMOND THOMPSON, M.D., Editor, Charlotte, N. C.

### BEAR PORPHYRIA IN MIND AND SAVE SOME OF YOUR PATIENTS THE RISKS OF SURGERY

THE TERM "porphyria" is preferred to "porphyrinuria" because the feces frequently contain even more porphyrins than the urine, and because there may be porphyrinuria in many diseases, and apparently the occurrence of porphyrin in the urine has nothing to do with the symptoms.

Congenital porphyria is the rarer form. Symptoms may be present at birth, or develop during childhood. With rare exceptions the earliest symptom is the red color of the urine. There may be a reddish discoloration of the teeth or the bones, and sensitivity of the skin to light.

Diagnosis rests on examination of the urine which contains large amounts of uroporphyrin I and coproporphyrin I.

Constipation is usually obstinate, nausea and vomiting frequently severe. Fever and leucocytosis may or may not be features. No rigidity of abdomen. Hypertension during the attack, with return of the b. p. to normal in a remission is common.

Nervous symptoms vary from paresthesias and vague pains to flaccid paralysis, irritability, hysterical outbursts, or delirium with hallucinations of vision and hearing, epileptic seizures and coma.

It is suggested that the psychiatrists might run a few more urine analyses before embarking on extensive psychotherapy.

There is no known specific treatment for this metabolic defect. Its recognition is important in order that the patient may be spared unnecessary surgery or prolonged psychotherapy, and in order that factors believed to precipitate attacks may be avoided.

Acute infections may precipitate attacks. Hence efforts to avoid exposure are in order. Since a number of drugs, especially the sulfonamides and barbiturates, seem important, at least as trigger agents, these should not be administered.

In the attack, the abdominal cramps are not relieved by atropine. Nicotinic acid has been claimed to be of benefit. Prostigmine has been reported of value as have calcium salts.

Supportive treatment during the periods of paralysis, with use of a respirator if necessary, as-

1. J. P. Hayman, Jr., Cleveland, in *Ohio Med. J.*, Aug.

piration of mucus from trachea, and treatment of bronchopneumonia may tide the patient over. After the acute episode, physical therapy, including regulated passive and active exercises and massage, are of value.

*Acute porphyria should be considered in the differential diagnosis of any case of unusual abdominal complaints, or of symptoms referable to the central nervous system, particularly when these occur together. If the possibility is kept in mind, many more cases will be recognized than have been in the past.*

### ANESTHESIA FOR THE POOR RISK PATIENT

THE CHOICE of anesthetic for a patient thought to be more liable than the average to suffer ill effects as discussed by Nicholson,<sup>1</sup> is here given in substance.

The attempt to use new anesthetic agents or methods on a critically ill patient because a slightly increased margin of safety has been reported to follow their use is extremely illadvised. To reduce the morbidity and mortality in this group of patients: improve their preoperative preparation; be more critical of the selection of the anesthetic agent and method; try to forestall operative and post-operative complications.

While valuable time is being lost discussing the irreversible pathologic processes—e.g., arteriosclerosis, hypertension, heart disease, pulmonary fibrosis and emphysema, and chronic liver and kidney diseases—reversible ones such as secondary anemia, hypoproteinemia, hypoprotebinemia, dehydration, obesity, diabetes, hypothyroidism and Addison's disease, are often neglected. It is on these conditions that emphasis should be placed if we are to give the poor-risk patient best chance to survive.

Chronic shock is manifested by weight loss, decreased blood volume, decreased blood protein and increased interstitial fluid volume. Here ordinary methods of blood determination fail. Correction of chronic shock necessitates an aver. of 2,700 c.c. of blood preoperative. There is a fundamental disturbance of hemoglobin metabolism in patients suffering from cancer.

Spinal anesthesia finds its greatest usefulness in operations on the lower extremities and genito-urinary tract and in the lower part of the abdomen of the poor-risk patient. We are now turning more and more to pentothal induction and ether maintenance for poor-risk patients who are having operations above the diaphragm.

Cyclopropane anesthesia, not profound, is probably best for the poor-risk patient suffering from

1. M. J. Nicholson, Boston, in *Anes. & Analg.*, Mar.-Apr.



hemorrhagic shock. The combination of curare and cyclopropane causes little circulatory depression even in poor-risk patients if they are well oxygenated at all times.

In well-run hospitals all patients undergoing major surgical procedures are grouped and cross-matched so that blood may be replaced in the operating room as it is lost. When the blood loss is great this should be overcome by the introduction of blood through multiple avenues and under pressure. *Intraarterial transfusion* of whole blood should be given in the postoperative period whenever the ordinary methods do not raise the pressure above 60 or 70 systolic.

Several pints of Group O, Rh-negative blood should be kept available, to which Witebsky's purified blood group specific substances A and B may be added. Such conditioned blood is safe and can be administered in an emergency without preliminary grouping and cross-matching.

The possibility of endotracheal tubes entering the right main-stem bronchus must be kept in mind and prevented. Aspiration of blood, pus and mucus through endotracheal tubes is much easier when a long rubber Levin tube or a plastic tube is used. Once a thoracic operation is concluded, both the surgeon and the anesthetist should auscultate the chest and establish the fact that air is entering all pulmonary segments normally. Should this not be the case, no measure short of bronchoscopy should be left undone. The chest closed and a catheter left in the pleural space, negative pressure must be applied constantly in order that the reexpanded lung on the operative side does not collapse. Keeping the chest catheter open under a water-seal until the patient has been turned supine, extubated and made to coughs, allows for the expulsion of 300 to 400 c.c. of additional air, reducing the chance of postoperative atelectasis.

Not enough attention is paid to the way anesthetized patients are placed on the operating table. Extreme Trendelenburg and kidney positions—in so many cases unnecessary—may set the stage for a postoperative pulmonary complication; modify these extreme positions, when impossible hyperventilate the patient's lungs before returning him to his room.

All patients who are to undergo gastric operations should come to the operating room with a Levin tube in place and undergo a thorough gastric lavage before the induction of anesthesia. Before emergency operations, lavage of the stomach should be carried out with a large gastric tube to allow removal of large particles of undigested food. The only safe way to manage the anesthesia of a patient undergoing operation for an actively bleeding gastric or duodenal ulcer is to insert an endotracheal tube with a balloon cuff attached, under topical an-

esthesia.

Because of liability to serious cardiac arrhythmia or cardiac arrest under anesthesia, particularly in chest operations, a well-planned routine for emergency treatment should be decided on well in advance. Procaine and epinephrine should always be available, as should pentothal in case a procaine reaction should result from too vigorous treatment.

## HISTORIC MEDICINE

### EIGHTEENTH-CENTURY MEDICAL CARE

FROM AN ARTICLE dealing with county medical practice in Britain in the century that brought independence to the English colonies in America,<sup>1</sup> many readers may glean much of interest.

In the course of the 18th century some dozens of general hospitals were founded in London and the main provincial centres and they were quickly followed by the establishment of dispensaries and special hospitals. Hospital and dispensary records throw little light on what was going on in rural and semi-rural areas where 80 per cent of the population lived.

Roxburghshire county occupies 1,000 square miles of the south of Scotland. Throughout the 18th century its economy was based entirely on agriculture, and though it comprised no more than 3 per cent of Scotland's total area it accounted for at least 10 per cent of her "valued rent." It was becoming a prosperous county and was always a beautiful one. And if, presently, it seems that the county attracted a disproportionate number of doctors to settle there the inducements of a district both prosperous and pleasant must be borne in mind.

Prior to 1770 movement through the country was hampered by lack of decent roads and bridges. But after that date the opening of four good stretches of turnpike road and an increase in the number of bridges over the Tweed and the Teviot correspond in time with a definite alteration in the scatter of doctors over the county.

The county's population was about 32,000. Of its four small towns Kelso had a population of 4,324; Jedburgh, 3,288; Hawick, 2,928; and Melrose 2,446. One of the principal responsibilities of the Kirk Session was to provide for the parish poor.

Jedburgh had "three physicians and three surgeons" in the parish; Castleton, "a surgeon"; Yetholm, "two doctors—one of them has given over business." In Kelso in 1795 there had been a public dispensary in the town for 20 years. A letter written to the local newspaper in 1798 refers to

1. J. E. McCracken, in *Proc. Royal Soc. of Med.* (Lond.), June.

inoculations against smallpox in Casleton "by the surgeon who resides in the parish." In St. Boswell's Session accounts one reads: August 13th, 1796, To Dr. John Mein for attending Mary Muir L 1. It is surprising to find one man making a living there when the population of the whole parish was only 500.

The poorness of the practice at St. Boswells is dramatically confirmed on examining the Session's accounts for subsequent years. They reveal the doctor who succeeded Dr. Mein in about 1803, a Dr. Oliver, to whose skill a local biography bears testimony, after 20 years there, became a pensioner of the parish, receiving regularly from the Kirk Session his coals, firewood and meal and, occasionally, a few shilling in cash, a pair of shoes, a hat or a great coat—costing 19s., and 6d. for carriage. Though there is evidence that 40 years earlier one of the Hawick doctors reached a similar degree of destitution, poverty was not the typical experience of a Roxburghshire practitioner of the period for at least four retired to comfortable little estates in the county, another became a considerable property owner in Kelso, and there are several examples in the half-century of sons succeeding happily to their fathers' practices.

The overall impression is that a ratio of one doctor to every 1,390 inhabitants in 1795 is a fair representation.

It is not clear how far it is reasonable to equate the work of a present-day rural general practitioner with that of an 18th century doctor who, in name at least, was either a physician, a surgeon or an apothecary, and whose travelling time on his country round, was 7 miles an hour as fair riding. On classifying 18th century Roxburghshire's 23 doctors 10 were regularly styled "Dr." and called physicians, 11 were referred to as "Mr. — surgeon" and two who were sometimes referred to as "surgeon" and sometimes as "apothecary —." Theoretically the physicians should not have taken apprentices nor performed inoculations nor treated such obviously surgical conditions as fractures nor done midwifery, but at Kelso, at least, one advertised for an apprentice, another inoculated, a third was paid to treat a fracture, and a fourth continued to attend confinements some time after he had taken his M.D. degree and become styled "physician," while the Kelso apothecary was also a competitor of the surgeons, at least in the matter of fractures. On economic grounds exclusiveness in practice was obviously incompatible with rural conditions. Where there was a choice of doctor, as in the towns, it was the size of the patient's purse rather than the nature of the illness that determined which type of doctor he called in.

By the end of the century two dispensaries were established, the one at Kelso and the other at Jed-

burgh, that were functionally different from the contemporary town dispensaries and well adapted to the special needs of this rural community.

Roxburghshire in this period was recognized to be politically and culturally progressive and it is wise to assume that in its socio-medical developments it was also ahead of the times.

#### CALCINOSIS INTERSTITIALIS CIRCUMSCRIPTA

(M. S. Madison, Beards Fork, in *W. Va. Med. J.*, April)

This is a condition of multiple calcareous deposits in the skin, in the subcutaneous tissue, and in the deep interstitial connective tissue; it is a chronic disease, hardly noticeable in its onset, slowly, though not uniformly, progressive.

The diagnosis can be made by finding superficial radiopaque nodules, especially over the extremities. The presenting symptom frequently is a sinus or ulcer discharging chalky material from a nodule.

Frequently coexistent are Raynaud's disease, or scleroderma.

Chemical analysis of the concretions shows composition as of bone. Blood chemistry examinations are usually reported normal.

#### CARE AND TRAINING OF THE MENTAL DEFECTIVE (FEEBLE-MINDED)

(J. E. Barrett, Williamsburg, in *J. a. Med. Monthly*, March)

The low-grade mental defective is unable to take any formal education, hence the only place for his care and training is the home or the institution. For many training consists primarily of how to dress themselves, keep themselves clean, and to eat discriminately. Middle-grade mental defectives (imbecile) are capable of learning to dress themselves, to keep clean, to do simple chores, and to adjust socially to others. They can rarely learn more than simple counting, and possibly reading of a few simple words such as signs for their own protection. They either remain at home under the supervision and care of their parents, or, like idiots, are committed to institutions. Most of them are capable of caring for their beds, washing dishes, taking care of lawns, and in some cases aiding in the farm duties.

The high-grade mental defective with proper training can achieve academically from the first to the fourth grade, can learn simple trades, participate in the world's work, and become partially or wholly self-supporting, provided he has sympathetic direction.

The border retarded child is usually trained in the public schools. He may be sent to the prevocational school where emphasis is placed on manual, rather than mental, work. The great majority of these children, however, remain in the regular grades of the public schools, and are dull, overage for their group, and usually indifferent to school work.

Public school systems in many larger cities employ one or several special procedures.

Training in institutions for mentally retarded children in many of the State and private institutions has become highly specialized. Emphasis is placed on manual training.

HEADACHE due to disease in other parts of the body or to general infections or intoxications are very numerous; the majority present little difficulty in diagnosis, other symptoms giving the clue. Kidney disease occupies first place, and as it usually comes on insidiously it may be overlooked, unless the urine is tested as a routine measure in all cases of recurring headaches.

—J. P. Martin, in *Brit. Med. J.*, April 1st.

I reckon indoor sports are all right—just so long as they go home at a reasonable hour.

## PRESIDENT'S MESSAGE

Two months ago we adjourned our 1950 Tri-State Annual Meeting. During that time I hope each and everyone of you has reflected many times on the first message that I wrote you as your President.

The Tri-State Medical Association means to you and to me just exactly what we want it to mean. Here are some of the things the Tri-State offers its members: first, the most congenial companionship of all medical societies—the high and the low, the old and the young, the general practitioner and the specialist, all meet on common ground. The Annual Meeting gives all an opportunity for a break in the routine of your work during the middle of the winter, at a time when a few days of relaxation is worth so much.

The Tri-State is also a family Association and it gives the ladies an opportunity to attend the meeting with their husbands and make friends with the wives of the other members, enjoy an outing themselves, see much beautiful scenery, and get away from their home cares and duties for several days during the mid-winter. Ask them and they will tell you that they love to go to the Tri-State meetings.

The Tri-State gives you an opportunity to visit all sections of our three States. It also gives you an opportunity to make more personal and lasting friends in the two Carolinas and Virginia. One cannot have too many real friends, and it is a very fine thing to have many friends among your fellow workers.

The Tri-State Medical Association will arrange any kind of program you desire. All you have to do is to make it known to any of the officers what type program you like. It will be the pleasure of the program committee to have suggestions from the newest to the oldest member.

The Tri-State Medical Association gives you an opportunity to learn to present your ideas to a body of professional men, and gives you an opportunity to learn to think while you are on your feet. It gives you an opportunity to gain confidence in your ability as a public speaker. It teaches you the persuasive methods necessary to make you an attractive, influential speaker.

Last, and most important, the Tri-State Medical Association will make you a better doctor, with a much wider connection—profession, social and political. All you have to do is to attend the meetings, bring someone with you and, when you wish, appear on our program. We do so much want to make the 1950-51 year an outstanding year in attendance. Each individual member will be proud of the Tri-State in proportion as he renders a definite service to it.

Faithfully,

R. B. DAVIS.



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As is true of most Medical Journals, all costs of cuts, must be borne by the author.

OSCAR EWING RECEIVES ("CLEAR THROUGH SIDNEY") HILLMAN AWARD

NOTHING could be more fitting than that the Sidney Hillman Award go to the right-hand man of the politician who owes his position as president to President Roosevelt's "clear through Sidney" order to those who came to him to be told whom to nominate for the vice-presidency.

The late Sidney Hillman, Russian-born president of the Amalgamated Clothing Workers of America, has been cited several dozen times by the House Un-American Activities Committee. For many years he was associated with such well known Communists as Earl Browder, Langston Hughes, Edwin Berry Burgum, and Rockwell Kent. He was a member, sponsor, or officer of numerous subversive organizations. After his death his place was taken by the Russian-born Jacob Potofsky, who has likewise been cited for his subversive activities. He is now president of the Amalgamated Clothing Workers union.

It is a sad commentary on the type of Federal official who has been appointed to high office under the Roosevelt-Truman regime that the present head of the Federal Security Agency, Oscar R. Ewing, should have been selected this past week as the recipient of the annual \$1,000 award of the Sidney Hillman Foundation. *Hillman was a notorious Communist collaborator; Potofsky was his right-hand man. It was Potofsky who presented the award to Ewing on March 11.* It would be refreshing to find some high officials in Washington who would spurn the favors of Communist collaborators.

Ewing took occasion to lash out at the Republican Party for raising "the scarecrow issue of socialism." He likewise attacked the American Medical Association.

According to the *New York Times* of March 12th, Potofsky said of Ewing: "He has won in our eyes the highest accolade of all when called by his enemies 'Mr. Socialized Medicine' himself." Ewing, who has spent large amounts of public funds to finance his preliminary campaign activities for the Governorship in New York, "is understood to be the first choice of the Amalgamated Clothing Workers and other unions of the CIO for the Democratic nomination."

A BURN INVOLVING EIGHTY PER CENT OF THE BODY WITH SURVIVAL

ALL of us were taught in college that all burns of the first degree are fatal if two-thirds of the body surface is involved, and all burns of the second degree are fatal if one-half of the body surface is involved. Also we were taught that scalds are

more serious area for area, and depth for depth than thermal traumas due to dry heat.

Of the patients admitted to the Massachusetts General Hospital for treatment of burns received in the Coconut Grove fire only one recovered following extensive burns. This patient had 56 per cent of his body surface burned and remained in the hospital 143 days.

Rosen<sup>1</sup> cites this teaching and reports a case . . . which refutes the teaching.

A Negro, 39, worker in a cotton mill, was first seen in the Emergency Room at Touro Infirmary at 4:30 a. m., Oct. 3rd, 1947. While mixing a large vat of dye the tank had exploded covering him from head to foot with boiling water and powdered dye.

In the shower it was noted that his entire body had been burned. He was in mild shock, p. 106, b. p. 100/60, in severe pain. He was given  $\frac{1}{4}$  gr. morphine and an infusion of plasma started. Because of the extent of burned surface and the collapse of the superficial veins it was necessary to cut down on an anterior tibial vein to insert the needle.

No further attempt at cleansing or any debridement was made, all the burned surfaces—neck, chest, abdomen, back, both arms, forearms, and hands, thighs, legs and feet—were covered with fine-mesh gauze impregnated with vaseline, this covered with dressings of five-yard rolls, and slight pressure made with elastic Ace bandages. Face, head, and eyes were also burned but no dressings were applied to these parts except a coating of plain vaseline. Two hours was the time required to apply the dressings, in which time he received 500 c.c. of plasma. He was then transferred to a private Negro hospital in an ambulance.

Course in Hospital: On admission t. 98, p. 84, r. 30, b. p. 110/60. A hematocrit was reported as 52, so an additional 500 c.c. of plasma was given. Besides this 1000 c.c. of 1% saline in 5% glucose. Penicillin was started 30,000 units q. 3 h., continued 25 d. At least 3500 to 4000 c.c. of fluids by mouth daily. Opiates were ordered to relieve pain, but following original dressing, he remained comfortable—given three  $\frac{1}{2}$  gr. tablets of codeine during his hospital stay, no other anodyne. On Oct. 4th reds were 4,340,000, hgb. 95%, whites 10,450—74% neu., 23% lymph., 3% l. mono-Urinalysis was done daily, at no time showed abnormality.

He was kept on a high-protein diet of 200 grams with 4000 calories, and ate well. It was never necessary to repeat the infusions. Ten days following his injury, under sterile precautions, without anesthesia, the burned areas were washed with soap and warm water, then recovered with vaseline and large

gauze dressings, and with new Ace bandages. All burned areas were healing, and only in a few places were there areas of deep granulation; pigment came off with the gauze and almost his whole body was red instead of black. Dressed again on October 28th, face completely healed and fully pigmented, many areas still red showed some pigmentation. A few small areas over the sacrum, shoulders, and elbows granulating. These were dressed and the patient discharged on October 31st to report to the office.

The small areas over shoulders, elbows, and sacrum were dressed three times a week for four weeks and finally all areas healed without the need for grafting. There were no constricting scars and all joints were freely movable. Diet was supplemented with high vitamin concentrate tablets and extra protein (Protenum). He returned to his job January 5th, 1948, three months following his burn, at which time he was completely healed and well.

How much of what we have been taught as fact established over the decades turns out to error! This report is passed on to the readers of *S. M. & S.* as one more reason for never despairing of a patient's life so long as there is breath in him.

#### MAKE RECTAL EXAMINATIONS BY FINGER AND BY PROCTOSCOPE

A NUMBER of famous doctors are credited with saying "the difference between a good and a poor doctor is that a good doctor makes rectal examinations."

Watson<sup>1</sup> emphasizes and enlarges on this theme.

The rectum continues to be the one body orifice which the physician does not adequately examine, although it surpasses both the mouth and the vagina as a site for cancer; 50 per cent of all cancers of the large bowel are in the rectum within reach of the examining finger and an additional 20 per cent can easily be seen through the proctoscope. One or both of these procedures is too frequently neglected, even in cases in which complaint is made of rectal bleeding, tenesmus, or change in bowel habit—anyone of which should direct the physician's particular attention to the area; and this failure is responsible for many of the deaths from cancer of the colon.

Routine use of the proctoscope in all cases with rectal symptoms would reveal many unsuspected polyps and prevent many of the errors in diagnosis and treatment, particularly in the cases of those patients who have both cancer and hemorrhoids.

The value of the digital rectal examination is very great; but it is not as reliable as is visual examination through the proctoscope, nor has the

1. J. R. Watson, in *Penn. Med. J.*, April.

1. W. L. Rosen, New Orleans, in *New Orleans Med. & Surg. J.*, April.

oft-repeated emphasis on the importance of its use resulted in any material increase in the number of cancers of the rectum which receive proper treatment at the earliest opportunity. The instrument is not difficult to use when inserted and advanced under direct vision. The physician who has a proctoscope and knows how to use it is not a proctologist but a better physician.

Every general practitioner should make daily use of the proctoscope. This practice will save lives. It will enlarge his clientele, his usefulness and his income.

### NOT CANCER CONTROL, BUT CANCER ERADICATION

THE DISPARITY between cancer's curability and the cures being achieved is striking. For example, cancer of the breast is curable in 80 per cent of patients treated when the disease is confined to the breast; yet the country-wide cure rate is less than 35 per cent. When cancer of the rectum is confined to the mucosa, cure rates of 70 per cent are reported; yet the overall rate of cure is only 11 per cent. Similar differences hold for most forms of the disease.

Caption and paragraph are from an editorial in the latest issue of the official journal<sup>1</sup> of the oldest State Medical Society in the United States.

We have long had the American Anti-Tuberculosis Association, an association *against* tuberculosis. When the group especially concerned about the ravages of cancer was organized, the name American Society for Cancer Control was chosen.

Over many years I protested against the use of the term "cancer control," insisting that we endeavor to "control" agencies which are intrinsically useful—children, horses, dogs, fire, electricity and so on. Tuberculosis, typhoid fever, cancer and other diseases, we desire and strive to abolish, to extirpate to eradicate, to do away with.

1. *Journal of the Medical Society of New Jersey*, April, 1950.

### RIGHT WAY TO QUESTION A NERVOUS PATIENT

QUESTIONS such as "Would you like to tell me about your difficulty?" invite the patient's cooperation and avoids the semblance of grilling. Direction of what appears to be significant facts in the history may be obtained by such comments as "I'm interested in this . . . . that you mention." Then listen attentively, sympathetically and uncritically; the patient ultimately will display his real conflicts in vivid, enlightening detail.

There should be recognition, interpretation and treatment of the various personality disturbances that come to the attention of the general practitioner.

—S. G. Egge, Albert Lea, in *Minn. Med.*, April.

### Write the Author Requesting a Reprint

"Recent Advances in Our Knowledge of the Nephrotic Syndrome," in *Bulletin New York Academy of Medicine*, October, by—

Drs. David Segal and Arthur R. Wertheim, Long Island College of Medicine, Brooklyn, N. Y.

"Hypersplenism," in *Bulletin New York Academy of Medicine*, by—

Dr. Charles A. Doan, Ohio State University, Columbus.

"Diagnosis of Pulmonary Disease," in *Journal Iowa State Medical Society*, by—

Dr. Arthur M. Olsen, Mayo Clinic, Rochester, Minn.

"An Appraisal of Therapeutic Procedures in Bronchial Asthma," in *Journal Iowa State Medical Society*, by—

Dr. Lawrence J. Halpin, Cedar Rapids, Iowa. Dizziness

"Intravenous Procaine in the Treatment of Arthritis and Fibrositis," in *New Orleans Medical & Surgical Journal* (May).—Author—Dr. James R. Green *et al.*, U. S. Marine Hospital

"Incisions, Their Making and Closure," in *Mississippi Valley Medical Journal*, May. Author—Dr. J. F. Pick, UUniversity of Illinois School of Medicine, Chicago.

### MASKED HYPOTHYROIDISM AS A BASIS FOR SYMPTOMS

(W. E. Storey, Columbus, in *Jl. Med. Assn. of Ga.*, April)

The lesser degrees of hypothyroidism are complaints widely varied, inconsistent from case to case, and, in many instances little suggestive of thyroid dysfunction.

Many cases of mild to moderate hypothyroidism present complaints, but seldom, if ever, physical features, which are definitely suggestive of thyroid over-function. The common denominator among these cases is increased nervous tension which may be manifested in a variety of ways. A BMR test reliably performed should decide the question. An elevated serum cholesterol gives further assurance in nearly every such instance the doctor will be justified in letting the laboratory reports overrule his clinical impression.

Almost any patient who presents multiple somatic complaints which are unsupported by comparable physical or laboratory findings may have mild to moderate hypothyroidism and deserves a BMR test done with care and interpreted with judgment.

Masked or inapparent hypothyroidism of mild to moderate degree occurs with greater frequency than is generally recognized and serves as a basis for multiple symptoms, some of which are very disabling. This basis is easily correctible by simple oral medication.

*Editorial Comment.*—Dr. Brodie Nalle was an extra good doctor. He gave thyroid extract to a much larger percentage of his patients than did doctors not so good.

THE INTENTION of an undergraduate to study medicine may have little bearing on his fitness or his chances for acceptance for that arduous course of study, to which so many believe themselves called, and for which so few are chosen.

—Editorial *N. E. Jl. Med.*, Mch. 16th.



## NEWS

### UNIVERSITY OF VIRGINIA, DEPARTMENT OF MEDICINE, CHARLOTTESVILLE

Recent visiting lecturers:

Dr. Howard C. Taylor, Jr., Columbia University. Subject: Psychosomatic Disorders in Gynecology. This was the second in a series of Tiffany Williams Memorial Lectures, established last year by former residents of the University Hospital who had served under the late Dr. Williams, Chairman of the Department of Obstetrics and Gynecology.

Dr. Stanley E. Bradley, Jr., Columbia University. Subject: Renal Adaptations to Medical and Surgical Stresses.

Dr. Frank B. Walsh, Johns Hopkins University. Subject: Ocular Signs of Myasthenia Gravis and Other Systemic Diseases.

Dr. Winchell Craig, The Mayo Clinic. Subject: Intra-spinal Tumors and Their Relation to General Diagnosis.

Dr. Edwin P. Lehman, Chairman of the Department of Surgery and Gynecology, University of Virginia Hospital, and past president of the American Cancer Society, was presented the American Cancer Society's 1950 medal for his work against cancer.

Elected to membership in the Virginia Chapter of the Society of the Sigma Xi at a meeting on March 28th:

Dr. Kenneth R. Crispell, Instructor in Internal Medicine.

Dr. Richard Finley Grise, Fellow in Surgical Pathology.

Dr. Glenn C. Hall, Jr., Instructor in Pharmacology.

Dr. Desmond Gourley, Research Assistant in Pharmacology.

Mr. James G. Hilton, Research Assistant in Pharmacology.

Associates: Paul S. Derian, C. Randolph French, W. M. Hall, III, Robert S. Harris.

Papers presented at a meeting of the Federation Societies of the Pharmacological Society in Atlantic City by members of the Department of Pharmacology, University of Virginia Medical School (April 17th-21st):

The Effects of Mercurial Compounds on Saccharase, by C. L. Gemmill and E. M. Bowman.

Effect of Temperature on Uptake of Radioactive Phosphate by Human Erythrocytes, by C. L. Gemmill and Desmond R. H. Gourley.

The Use of Thermistors in Twin Calorimetry for Enzyme Reactions, by F. C. Holler, D. Venable and C. L. Gemmill.

Effect of d- and l- Methadone on Blood Glucose and Lactate of Dog, by D. T. Watts.

A Study of Digoxin in Blood, by James G. Hilton.

### MEDICAL COLLEGE OF VIRGINIA

Dr. William T. Sanger, president of the College, was honored at a program April 27th at the College on the occasion of the completion of his 25th year as president of the College.

Climaxing a program of tributes Doctor Sanger was given a new car by the faculty, students and personnel of the College, and a silver bowl by the College's Board of Visitors. Robert T. Barton, Jr., chairman of the Board of Visitors, presided at the program. Those paying tributes to Dr. Sanger were: Governor John Stewart Battle, Mayor W. Stirling King; Dr. L. J. Roper, Commissioner of the State Health Department; Dr. George M. Modlin, president of the University of Richmond; Dr. Harry L. Claud, an alumnus; Dean Harvey B. Haag of the College's School of Medicine, and Wyndham B. Blanton, Jr., president of the student body.

Dr. Sanger succeeded Dr. Stuart M. McGuire as president of the College on March 24th, 1925. During the quarter century of his administration the College's enrollment has increased from 525 undergraduates to 999, from 19 residents and interns to 124, and from three medical technicians to 15. There were no students in x-ray technology or dietetic interns in 1925; there are 15 and 12 of these, respectively, at the present time. The faculty has increased from 173 to 490, the College division budget from \$183,615.70 to \$985,533.00.

The hospital division has greatly expanded during the years of Dr. Sanger's presidency. Patient admissions to the hospitals have increased from 5,786 to 21,000, outpatient visits from 23,360 to 85,000, emergency unit visits from 2,192 to 29,000, births in hospitals from 207 to 3,423, surgical operations from 3,290 to 9,603. The bed capacity of the hospitals has more than doubled from 424 to 860 and the hospital division budget has increased from \$271,609.16 to \$3,412,600.00. The total budget of the College exclusive of endowment income, gifts, grants and research has increased during the 25 years from \$455,224.86 to \$4,398,133.00.

Other noteworthy progress the College has made is indicated by the fact that money for research when Dr. Sanger became president was negligible and today amounts to \$343,356.50; and gifts, grants and bequests were negligible in 1925 but these last year amounted to \$432,563.96. The principal of endowment and trust funds was \$13,265.00 in 1925 and today it is \$3,200,000.00. The value of the physical plant and equipment, which was \$374,476.88, now is \$6,000,000.00.

Among the projects Dr. Sanger said he was impatient to start are a new dental building, the remodeling of another building to care for the chronically ill, a building to house the College's research activities and more dormitory facilities for students.

Dr. James D. Hagood and Rear Admiral Lewis L. Strauss will be awarded honorary degrees at the 113th commencement program of the College on June 6th.

Dr. Hagood's degree is master of science in general medicine, newly established by the college to give recognition to the importance of the general practice of medicine. Dr. Hagood was chosen by the college as the first recipient of the degree because he is an accomplished alumnus of the college, a general practitioner of high rank, who has been honored by his profession and has served with distinction in the Virginia Senate. He is widely esteemed and greatly beloved throughout a large area of Southside Virginia. He was selected Virginia practitioner of the year 1948 and is now president of the Virginia Academy of General Practice.

Rear Admiral Strauss, a native of Richmond, will be given the honorary degree of doctor of science. He rendered distinguished service as secretary to former President Herbert Hoover in Belgian relief work and is a member of the Naval Reserve. He was promoted to Rear Admiral in World War II, the first member of the Naval Reserve to receive such distinction. He was a member of the Atomic Energy Commission until recently and is highly regarded for his public service.

### RICHMOND HOSPITAL GETS GIFT IN MEMORY OF DR. R. S. MONTGOMERY

Former classmates of the late Dr. Robert Sterling Montgomery at the Medical College of Virginia have contributed \$12,400 in his memory to build and equip the interns' lounge and locker room on the second floor of the new Richmond Memorial Hospital, it has been announced.

Before his retirement in 1946 and death in February, 1948, Dr. Montgomery had been in practice with his father, Dr. C. V. Montgomery, at South Hill. Active in civic

affairs, he had held office as president of the South Hill Chamber of Commerce and was also a member of the board of Richmond Memorial Hospital when plans for the project were still in process of formulation.

In 1930 he was graduated from Randolph-Macon College, where he had been president of various student organizations, and four years later received his M.D. degree from the Medical College of Virginia. There he was president of the athletic association and a member of Sigma Zeta and Phi Chi fraternities. Dr. Montgomery interned at St. Luke's Hospital in Richmond in 1934-35 and was a surgical intern at the Medical College of Virginia in 1936.

**HORSLEY RESEARCH AWARD PRESENTED DR. E. S. HEGRE**  
The Virginia Academy of Science, meeting at Roanoke May 12th, presented its annual J. Shelton Horsley research award to Dr. Erling S. Hegre, associate professor of anatomy at the Medical College of Virginia.

Dr. Hegre won the coveted academy award for developing motion picture photography of serial slicing of embryos which fellow-scientists said will open up new fields of research in embryology.

Scientists selected Dr. Paul Morrison Patterson, chairman of the department of natural science at Hollins College, as president-elect of the Academy.

Dr. Guy W. Horsley, surgeon at St. Elizabeth's Hospital, Richmond, was elevated to the presidency of the Academy, of which his father, Dr. J. Shelton Horsley, after whom the research award is named, was a founder and fourth president.

**A LETTER BRINGS MORE INFORMATION THAN WAS ANTICIPATED**

It occurred to me some weeks ago to inquire of the Jefferson Medical College somewhat about the graduation of my grandfather's oldest brother, and whether or not my step-great-grandfather, Dr. John Gregory, was graduated from Jefferson.

Here is the reply.  
Dear Doctor Northington:  
Dr. William H. Northington graduated from Jefferson Medical College on May 28th, 1849. The degree of Doctor of Medicine was conferred on him by Rev. C. C. Cuyler, D.D., President of the Institution, after which a charge to the graduates was delivered by Prof. Houston.

The subject of his graduation thesis was, "Peculiarities of the Female."

We have 3 Gregorys in our file who graduated from Jefferson in 1854 and 1859, respectively, but none earlier than 1849. If you can give us further information, we will be glad to assist you.

Alumni Office  
Jefferson Medical College

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The Directory issue of *Graphics*, the official publication of the Association of Medical Illustrators, contains the name, address, training, professional experience and reference to major published work of each member. Other information pertaining to the profession is included.

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## DIED

Dr. Charles Richard Drew, professor of surgery in Howard Medical School, met sudden death at about 8 a. m. Saturday, April 1st, near Burlington, N. C., when the car which he was driving went out of control, spun around and overturned. Dr. Drew, known to have been fatigued, apparently dozed at the wheel. Also in the car were Drs. Samuel L. Bullock, John Ford and Walter Johnson. All were going to the John A. Andrew Clinic at Tuskegee. Dr. Ford suffered a broken arm, but Drs. Bullock and Johnson had only minor injuries. A passerby phoned for aid and an ambulance quickly brought Dr. Drew to the Alamance General Hospital in Burlington, a white institution, where he received instant and expert attention from the staff without hesitation.

—*Jour National Med. Assn.*, May.

## ORCHITIS IN THE COURSE OF SEVERE CHICKEN POX WITH PNEUMONITIS

(Wesselhoef *et al.*, Boston, in *N. E. J. Med.*, Apr. 27th)

Chicken pox usually runs a simple and uneventful course. This virus disease is capable of giving rise to a miliary type of pneumonia, several forms of encephalitis and nephritis. A search through the literature brought to light only one case of orchitis and epididymitis in the course of chicken pox. In the case presented a unilateral orchitis and epididymitis occurred in conjunction with miliary pneumonia; partial atrophy of the testicle followed.

## OUTBREAK OF SMALLPOX IN A HOSPITAL

(H. A. Schulze, in *New Eng. J. of Med.*, Mar. 9th)

The admission of a smallpox patient in an Army hospital in Germany was followed by the occurrence of 13 other cases.

Many vaccinations against smallpox are worthless because of the employment of a poor technic or an impotent virus. A person having no vaccination mark or giving no

clear-cut history of successful vaccination should show a pustular lesion six to 12 days after successful vaccination.

The diagnosis of smallpox should be attempted by laboratory means as soon as the suspicion of the diagnosis develops and should not wait the occurrence of secondary cases.

## BLOOD MADE TOXIC BY ELECTRIC SHOCK AND DRUG CONVULSIONS

(D. I. Macht, Baltimore, in *Sou. Med. J.*, May)

After electrotherapy, immediately after the shock treatment, the blood is always toxic. It is only in the latest stages, when the patients have become more or less cured, that the blood is normal.

We electrocuted animals, not fatally, and examined the blood before and after electrocution. After electric convulsions and also after other kinds of convulsions, as those due to convulsant drugs, the powerful contractions of the muscles, with the subsequent rise in blood pressure, set free all kinds of metabolic products which give phytotoxic reactions.

## EPISTAXIS

(L. W. Pratt, Waterville, in *Jl. Maine Med. Assn.*, April)

A little pressure on the alae and a few min. of time are all that are required to stop most cases of nose-bleed. The most common nose-bleed is caused by the fingernail; this responds well to pressure to the alar cartilages, a small tampon of adrenalin or hydrogen peroxide, or to electrocoagulation. This obviates the uncomfortable packing and the likely recurrence of such bleeding when the packing is removed. It eliminates the complications of sinusitis and otitis media incident to packing the nose. Thus it is recommended that in cases of epistaxis difficult to control, the bleeding point be isolated and electrocoagulated.



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## BOOKS

**YOU AND YOUR HEART: A Clinic for Laymen on the Heart and Circulation**, by H. M. MARVIN, M.D., T. DUCKETT JONES, M.D., IRVINE H. PAGE, M.D., IRVING S. WRIGHT, M.D., DAVID D. RUTSTEIN, M.D. Foreword by PAUL D. WHITE, M.D. Random House, 457 Madison Avenue, New York 22, N. Y. 1950. \$3.00.

The book is written for those members of the general public who would like to know more about the normal and the diseased heart. The authors conceived it to be widely believed that doctors generally are unwilling to explain to their patients many things about the heart that the patients very much desire to know. The authors say that their book is not intended to encourage persons outside the profession to make diagnoses and decide on proper treatment. Its chief purpose is to enable patients to understand their hearts sufficiently to prevent the development of needless anxiety through either lack of, or perversion of, knowledge. It may be safely assumed that the book will accomplish much of its objective.

**HANDBOOK OF PHYSICAL MEDICINE AND REHABILITATION**, by The Council on Physical Medicine and Rehabilitation of the American Medical Association and 29 contributors. With 573 pages; 56 illustrations; 25 tables. *The Blakiston Company*, 1012 Walnut St., Philadelphia 5 or Toronto 2. 1950. \$4.25.

Since rehabilitation is included in the text, what would be the fifth revised edition of physical medicine is designated a first edition. The edition broadens the scope of the work to the degree that practically all of the technics requisite for proper care after disabling diseases and traumas are adequately covered. The book is to be especially commended for its critical evaluation of the methods used in physical medicine, and for its describing the physiologic effects of the different therapeutic agents, as well as the technics of application.

**TEXTBOOK OF BACTERIOLOGY**, by JOSEPH M. DOUGHERTY, A.B., M.A., Ph.D., Dean of the School of Science and Professor of Bacteriology, Villanova College; Fellow of the American Association for the Advancement of Science, and ANTHONY J. LAMBERTI, B.S., M.S., Instructor in Bacteriology and Parasitology, Temple University School of Medicine. Second edition, with 141 illustrations. *The C. V. Mosby Company*, 3207 Washington Blvd., St. Louis 3. 1950. \$5.75.

This edition represents a thorough revision of the first with a number of additions, while retaining the original plan of supplying a text appropriate for instruction of the undergraduate rather than an exhaustive treatment of all the details of the subject. The chapters on bacterial types and the effects of physical and chemical agents have been to a great extent rewritten. Only representative types considered adequate for the purpose of

this text of the rickettsial and viral diseases are dealt with. Special attention is directed by this reviewer to the excellence of the discussion of the subject of immunity and hypersensitivity.

**PROCTOLOGY IN GENERAL PRACTICE**, by J. PEERMAN NESSELROD, B.S., M.S., M.Sc. (Med.), M.D., F.A.C.S., F.A.P.S., Associate in Surgery, Northwestern University Medical School; Associate Surgeon, Division of Proctology, Evanston Hospital, Evanston, Ill. Illustrated. *H. B. Saunders Company*, W. Washington Sq., Philadelphia 5, and London. 1950. \$6.00.

The author has been influenced to prepare this book by noting the increase in interest in the early diagnosis of rectal and colonic cancer, and the determination of many doctors in general practice to do more and more of their perianal and rectal surgery. The author is to be commended for the wise choice of material to be included, and for the accurate portrayal of information on diagnosis and treatment, without wastage of words.

**A PRIMER OF VENOUS PRESSURE**, by GEORGE E. BURCH, M.D., Henderson Professor of Medicine, Tulane University School of Medicine; Senior Visiting Physician, Charity Hospital. With 170 illustrations. *Lea & Febiger*, Washington Square, Philadelphia 6, Pa. 1950. \$4.00.

This book is provided for those who have given little consideration to venous pressure in diagnosis and management. The fundamental reasons for considering variations in venous pressure of practical diagnostic and prognostic import are well stated. Indirect methods of making these measurements, as well as the direct method, are detailed, and applied to office and bedside use. Relationship of venous pressure and its determination to congestive heart failure, varicose veins, shock, and other disease conditions are discussed in a separate chapter.

**SPONTANEOUS REMISSION IN SUBACUTE LEUKEMIA** (J. F. Hammersten & C. B. Chapman, Minneapolis, in *Minn. Med.*, Mar.)

A case of subacute lymphatic leukemia with complete spontaneous remission lasting 10 weeks is presented. During the remission the patient's symptoms and abnormal physical findings disappeared. The peripheral blood and bone marrow became normal in all respects. The spontaneous improvement was comparable to remissions that have recently been attributed to the use of folic acid antagonists, the clinical status of which is briefly discussed.

*Addendum*.—Five additional cases of remission in acute leukemia, substantiated by bone marrow biopsy are cited in a work, which was not available until after the report was prepared.

### THE IMPORTANCE OF CORRECT SPEECH

The art of conversation is the hallmark of the man. No human enterprise demands greater need, for so large a part of everyday life, whence its dangers or its advantages; if care is necessary to write a letter; which is conversation studied and committed to paper; how much more is necessary in everyday speech, when the intelligence must at every movement pass examination. . . . The Sage of sages said: Speak, if you would that I know you.

—Baltasar Gracian in *A Truth-telling Manual*.

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JAMES M. NORTHINGTON, M.D., Editor

VOL. CXII

JUNE, 1950

No. 6

## The Present Status of the Treatment of Hyperthyroidism

GEORGE CRILE, JR., M.D., F.A.C.S., Cleveland

Reprinted by permission from *The Journal of The International College of Surgeons*, May-June, 1949

### THYROIDECTOMY

UNTIL the discovery of the antithyroid effects of the derivatives of thiourea, subtotal thyroidectomy was the only means of controlling hyperthyroidism. Now propylthiouracil, developed by Astwood, has proved to be a relatively non-toxic drug and in adequate doses has been effective in controlling the hyperthyroidism of over 90 per cent of the patients treated.<sup>1</sup> Although the hyperthyroidism often recurs promptly when treatment is withdrawn, some patients remain in remission indefinitely and appear to be cured.

The controversy between the proponents of propylthiouracil and those of thyroidectomy was at its height when radioactive iodine, first used in 1941 by Hertz<sup>2</sup> and independently by Hamilton and Soley,<sup>3</sup> became available in the form of I<sup>131</sup>, and was distributed for experimental use by the atomic energy commission.

Propylthiouracil, thyroidectomy, and I<sup>131</sup> each has its advantages and each seems well adapted to the treatment of certain patients with hyperthyroidism and less well adapted to the treatment of others. The purpose of this discussion is not to pass final judgment on the merits of the various forms of treatment now available but is rather to evaluate our present knowledge of their advantages and disadvantages.

Thyroidectomy, after preparation with iodine, can be accomplished with a mortality rate of slightly less than 1 per cent.<sup>4, 5</sup> But if operation is deferred until the hyperthyroidism is completely controlled by the administration of propylthiouracil, and if the patient is further prepared by the administration of large doses of iodine for the last two weeks, the mortality rate of thyroidectomy falls to less than 0.2 per cent.<sup>5, 6</sup>

One of the factors in this reduction in mortality is the complete control of the hyperthyroidism prior to operation—a circumstance which reduces the risk to the level of that of thyroidectomy for simple goiter. A second factor is the ability of the surgeon to select the cases for operation and to treat by non-surgical means those patients who are not good risks.

Although thyroidectomy is an effective means of controlling hyperthyroidism associated with Graves' disease as well as that secondary to nodular goiters, the incidence both of recurrent hyperthyroidism and of postoperative hypothyroidism is much higher following operations for Graves' disease than following those for nodular goiter. If a very radical subtotal thyroidectomy is done for this disease, the incidence of postoperative hypothyroidism will be in the neighborhood of 20 per cent and the incidence of recurrent hyperthyroidism over a five- to ten-year period in the neighborhood of three

per cent. If a conventional type of thyroidectomy is done, the incidence of hypothyroidism will be only about four per cent. However, 15 per cent of the followed cases will develop recurrent hyperthyroidism within five to 10 years.<sup>2</sup> Following operations for nodular goiter with hyperthyroidism the incidence of recurrent hyperthyroidism is almost negligible. Regardless of technic, myxedema does not occur unless a true total thyroidectomy has been done, and even mild hypothyroidism is rare.<sup>3</sup>

In view of this experience it is clear that thyroidectomy is a preëminently satisfactory treatment for nodular goiter with hyperthyroidism and is a somewhat less satisfactory answer to the treatment of Graves' disease.

The morbidity following operation for Graves' disease and following operations for nodular goiter is approximately the same. If the conventional technic of resection of the thyroid over closed hemostats is used, my own experience indicates that it is not possible to perform an adequate thyroidectomy without causing permanent damage to one recurrent laryngeal nerve in about three per cent of the cases and causing permanent tetany in at least 0.6 per cent.<sup>4</sup> If the anatomic technic is used and the thyroid is rotated from its bed, the inferior thyroid artery ligated well lateral to the thyroid, and the recurrent nerve and parathyroids identified, the incidence of these complications is reduced to less than 0.4 and 0.2 per cent, respectively.<sup>5, 7</sup>

From this summary it is apparent that in the hands of surgeons interested in thyroid disease, the mortality, morbidity, and end results of thyroidectomy for nodular goiter with hyperthyroidism are excellent and for Graves' disease are good, but somewhat less perfect.

Other factors associated with thyroidectomy that require consideration are:

1. The necessity for loss of work, hospitalization, and a relatively long period of detailed professional supervision.
2. The natural distaste of the patient for the discomfort and anxiety associated with an operation.
3. The minimum, but ever-present risk of increasing mortality or morbidity by operation.
4. The fundamental principle that if a more conservative treatment can give as good a result it is preferable to an operation from the standpoint of both patient and physician.

In favor of thyroidectomy are the following considerations:

1. The goiter is removed, a factor which may be of cosmetic importance and which may eliminate the remote possibility of a coexistent malignancy in a nodular goiter.
2. The results of treatment are prompt and de-

finite as compared with prolonged treatment with propylthiouracil.

#### PROLONGED TREATMENT WITH PROPYLTHIOURACIL

Propylthiouracil blocks the formation of thyroid hormone and in this way produces a physiologic instead of an anatomic thyroidectomy. It is not apparent why the hyperthyroidism does not always recur following a course of treatment with propylthiouracil because so far as is known, the underlying cause of the hyperthyroidism (i.e., the factor which drove the thyroid to hyperfunction) is not affected by the drug. Despite this fact longstanding and possibly permanent remissions of hyperthyroidism may be seen after a course of medical treatment. Complete control of the hyperthyroidism for a period of time, whether it be by thyroidectomy or by propylthiouracil, breaks the vicious circle of neuroendocrine disorders that are responsible for the maintenance of the hyperthyroid state.

Because it appears that complete control of the hyperthyroidism, for a period of several months or preferably from six months to a year, is a prerequisite for induction of a longstanding remission it is important to give a dose adequate to bring the basal metabolic rate to normal (0) or subnormal levels. Hyperthyroidism will recur promptly in those patients whose hyperthyroidism has been only partially controlled and also tends to recur promptly in those in which the period of control is unduly short.

McCullagh<sup>1</sup> has observed that 200 mg. of propylthiouracil will control the hyperthyroidism completely in 87 per cent of the cases and 300 mg. will effect control in 96 per cent. If hypothyroidism develops it is better to add small doses of thyroid than to reduce the dose of propylthiouracil to levels which may allow recurrence of hyperthyroidism. Small doses (10 mg. daily) of iodine given along with propylthiouracil do not significantly delay its action and may prevent the development of excessive vascularity. Propylthiouracil should be given in divided doses four times daily because the duration of the block induced by a single effective dose is short.<sup>8</sup>

The toxicity of propylthiouracil is low. No fatalities definitely attributable to its use have as yet been reported and agranulocytosis is rare. Side effects appear in about three per cent of the cases and may be of sufficient severity to indicate discontinuation of treatment. Among the symptoms of toxicity are fever, skin rash, leukopenia, granulopenia, headache, and nausea. The incidence of agranulocytosis is so low that we have not believed it necessary to insist on weekly blood counts, but on merely checking the white blood count every two or three months when the basal metabolic rate is determined. We warn the patient to discontinue treatment and report at once for a blood count, if unusual symptoms should develop.



## RESULTS OF TREATMENT

Experience in the treatment of over 300 patients by prolonged administration of propylthiouracil by Dr. E. P. McCullagh at the Cleveland Clinic indicates that it is difficult to obtain longstanding remissions in the following groups of cases.

1. Patients with severe hyperthyroidism (basal metabolic rate over plus 50) and large goiters (more than 2 or at most 3 times normal size). In these patients the hyperthyroidism tends to recur promptly as soon as medication is withdrawn or dosage decreased.

2. Patients who do not respond well to treatment and in whom a low-grade residual hyperthyroidism persists despite the administration of the usual dose.

3. Patients with severe recurrent hyperthyroidism regardless of the size of the goiter.

4. Patients whose thyroids enlarge under treatment. In these cases not only does the hyperthyroidism tend to recur promptly when treatment is withdrawn but also the thyroid continues to enlarge so long as the drug is given.

5. Patients of a low order of intelligence or those who will not cooperate are poor subjects for prolonged treatment as they tend to discontinue treatment or take the medicine irregularly.

6. Hyperthyroidism associated with a nodular goiter may respond to treatment as well as Graves' disease, but patients with large nodular goiters often respond slowly and incompletely to ordinary doses. Since nothing but thyroidectomy removes the goiter and eliminates the remote possibility of a coexisting carcinoma, thyroidectomy after preparation with propylthiouracil is a more satisfactory method of treatment than prolonged medical treatment unless the patient's life expectancy be short and his condition poor.

The group of patients best suited for a trial of prolonged medical management in hopes of inducing a permanent remission, are those with small diffuse goiters and mild to moderate hyperthyroidism. Provided that the patient is willing and able to cooperate, provided that there is no intolerance to the drug, no enlargement of the thyroid during treatment, and provided that the response to 300 mg. of propylthiouracil daily is complete, there is about a 60 per cent chance that the drug can be withdrawn after nine months of continuous treatment and that the remission will persist. In 20 per cent of the cases, the hyperthyroidism will recur promptly and in the last 20 per cent it will recur within a few months.

## RADIOACTIVE IODINE

$I^{131}$  is well adapted both physically and chemically to the treatment of hyperthyroidism. Since its half life is only eight days, nearly half of its radiation is expended in a week and most of it in a

month. No detectable traces of radiation remain in the thyroid two or three months after treatment.

In hyperthyroidism  $I^{131}$  is concentrated in the thyroid exactly like the stable form of iodine, in concentrations up to 10,000 times as high as in any other tissue of the body. Thus the thyroid receives intense irradiation while other organs receive almost negligible amounts following the average dose.<sup>3</sup>

Since over 90 per cent of the radiation of  $I^{131}$  is in the form of beta rays which penetrate the tissues for a distance of only one or two millimeters, there is no danger of serious injury to parathyroids, recurrent laryngeal nerve, trachea or other structures in the vicinity of the thyroid. Moreover, since the  $I^{131}$  is taken up selectively by the parts of the thyroid that are functioning most actively, these areas are selectively inactivated without interfering with the potential function of areas that are inactive.

Since thyroid hormone contains iodine, and since in hyperthyroidism this hormone is fabricated in hyperfunctioning thyroid cells, it is theoretically possible to control the hyperthyroidism in 100 per cent of the cases if sufficient  $I^{131}$  is given in divided treatments. In Graves' disease, when the uptake of  $I^{131}$  tends to be uniform throughout the diffuse hyperplastic goiter, one small dose usually suffices to effect a cure. In nodular goiter with hyperthyroidism, however, the uptake of  $I^{131}$  may be irregular and repeated doses may be required before the hyperthyroidism is controlled. By this technic the most active areas are first inactivated and then as the next most active areas take over the function they in turn are inactivated by the second treatment and so on until a normal level of function is attained.

In a group of 28 patients all of whom have been followed longer than six months since the beginning of treatment, we have been able to control the hyperthyroidism in all cases.

In 19 patients with Graves' disease treated with  $I^{131}$  the average basal metabolic rate has fallen from plus 45 to 0. Control of the hyperthyroidism was effected by one treatment in over half of the cases and by two or three in the rest. The hyperthyroidism was well controlled in an average of three months after the first treatment. In most cases the thyroids are no longer palpable. Two patients have developed hypothyroidism.

In nine patients with nodular goiter with hyperthyroidism the average basal metabolic rate has fallen from plus 39 per cent to plus 7 per cent. The hyperthyroidism in all cases was well controlled in an average of five months after the first treatment. Two or three times as many treatments were required, however, and the total dose was three or four times as high. The average size of the thyroid

has decreased from an estimated weight of 125 gms. to 70 gms. Hypothyroidism has not been observed.

The treatment of hyperthyroidism is to a large extent empiric whether it be by thyroidectomy, by propylthiouracil or by  $I^{131}$ . Surgeons have long known that a partial thyroidectomy for Graves' disease in which 5 gms. or more of thyroid is left often is followed by myxedema, whereas even the most radical subtotal thyroidectomy performed upon patients with normal thyroids or with nodular goiters causes no more than a transitory lowering of the basal metabolic rate. Similarly in Graves' disease a very radical thyroidectomy, in which only a few grams of thyroid tissue is left, may be followed by a recurrence of the hyperthyroidism. For these reasons we believe that attempts to estimate the exact amount of radiation that will be required to effect a desired result will often fail. Since the treatment of hyperthyroidism is essentially empiric it is safer to treat the patient by the method of Soley, giving repeated small doses until the desired effect is obtained.

In Graves' disease the required dose appears to be dependent more upon the severity of the hyperthyroidism than upon the size of the gland, although the latter must also be taken into account. Two or three mc. may control mild hyperthyroidism associated with small diffuse goiters whereas six to ten mc. may be required for very severe hyperthyroidism associated with large diffuse goiters. The average initial dose used in 80 per cent of patients with Graves' disease is 4 mc. This dose may be repeated in two or three months if it proves inadequate or a smaller dose may be given if there is only slight residual hyperthyroidism. Since the full effects of the initial dose may not be apparent for four months, it is important not to treat the patient again too soon after the first dose if striking improvement has already been obtained.

In large multinodular goiters doses as high as 16 mc. may be given without danger of inducing hypothyroidism. The average dose is eight to 10 mc. repeated at two-month intervals until the hyperthyroidism is controlled.

Occasionally a mild exacerbation of hyperthyroidism is observed in the first week or two following therapy, but aside from this no side effects or complications have been noted in 120 patients treated with  $I^{131}$ .

Although it is clear that  $I^{131}$  is a simple, effective and immediately safe method of treatment of hyperthyroidism, the ultimate results of such intense radiation are not yet known. The possibility of late carcinogenesis has been suggested, and for this reason  $I^{131}$  cannot be recommended without qualification for the treatment of younger patients. Although there is as yet no clinical or ex-

perimental evidence that carcinoma of the thyroid can be induced by  $I^{131}$ , it is probably safer to limit its use to patients in the older age groups, or to those with recurrent hyperthyroidism or special problems of sufficient difficulty to justify the use of such intensive irradiation.

#### SUMMARY

At the present time there are three safe and effective means of treating hyperthyroidism: (1) thyroidectomy after preparation with propylthiouracil; (2) prolonged treatment with propylthiouracil; and (3) administration of radioactive iodine.

Each of these methods is valuable in selected cases. The treatment of hyperthyroidism should be individualized and each patient should be treated by that method which assures the best prospect for a safe and definitive cure.

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#### OUTBREAK OF SMALLPOX IN A HOSPITAL

(H. A. Schulze, in *New Eng. J. of Med.*, Mar. 9th)

The admission of a smallpox patient in an Army hospital in Germany was followed by the occurrence of 18 other cases.

Many vaccinations against smallpox are worthless because of the employment of a poor technic or an impotent virus. A person having no vaccination mark or giving no clear-cut history of successful vaccination should show a pustular lesion six to 12 days after successful vaccination.

The diagnosis of smallpox should be attempted by laboratory means as soon as the suspicion of the diagnosis develops and should not await the occurrence of secondary cases.

#### BRAIN TUMOR

(J. H. Globus, New York, in *Jl. Mt. Sinai Hosp.*, Mar-Apr.)

Attention is drawn to data which point to the somewhat lengthened survival period in operative cases and to the exceptional instance in which a longer and useful survival period followed surgical intervention. These data serve as a strong argument in favor of surgical restraint and greater coöperation between the neurosurgeon and the seasoned neurologist. Such joint function would insure against some avoidable errors and help in the selection of cases most promising for successful surgery.

It is left to the mature reader to consider the importance of careful investigation of the individual case of brain tumor-suspect before a final decision is made in favor of surgical intervention. It follows that a thorough screening by a competent observer in the field is imperative to exclude such instances in which surgical intervention is but adding insult to injury.

## Headache - Functional and Organic

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**H**EADACHE, with the possible exception of backache, is the commonest subjective complaint of mankind. It varies greatly in location, type, degree or intensity, frequency and duration. It may be indicative of very serious intracranial disease or purely functional. In this paper, it is proposed to discuss briefly the various types of headache in two general groups—functional and organic. Before definite entities are considered, however, it might be well to stress the importance of a general physical examination and a careful consideration of the background and environment of the patient who complains of headache. The temperature should be recorded, a complete blood count and urinalysis made, as well as a blood Wassermann, NPN or blood urea, and blood sugar. The blood pressure in each arm should be noted and skull x-rays made. An occasional lumbar puncture is required but such a procedure should be done only in *selected* cases for fear of producing a post-puncture headache, which would only add to the woes of the patient. The importance of these simple but essential preliminary tests will become evident as the different causes of headache are considered.

A simple statement by the patient that he has headache is not sufficient for the physician trying to get to the real cause of the complaint. Headache varies tremendously in (a) *type or degree*: mild pressure sensation, throbbing (synchronous with the pulse), excruciating, etc., (b) *location*: unilateral, bilateral, anterior or posterior, (c) and *frequency*: daily, diurnal, nocturnal, monthly, etc. Is it getting worse; is medicine necessary for its relief and if so, what drugs; has the patient lost time from work because of the headache? These are all-important questions to ask the patient in the initial history-taking interview.

### FUNCTIONAL

(1) *Psychogenic*: This diagnosis is one of *exclusion* only and several cases will be briefly cited later in this paper to illustrate how wary one must be in labeling a particular headache as "psychogenic" before every diagnostic possibility, including air injection in some cases, has been exhausted. With increasing experience, the clinician can spot these cases with greater accuracy. A patient whose chief complaint is headache with no

objective neurological findings is often one with a psychogenic headache. Occasionally when the background of the patient is investigated, a personal, marital, business or other problem is uncovered which is the clue to the diagnosis. Brain tumor and other serious lesions often do not have headache as their chief complaint but such patients will complain perhaps of diplopia, of having had a convulsion or two, or of progressive weakness of an extremity; headache is often a secondary matter. Post-traumatically, namely, after concussion, a headache that does not subside with time (if not due to a serious lesion such as a subdural hematoma) is often psychogenic, if not actually due to malingering on the part of some patients with a compensation or insurance factor in the injury; particularly is this liable to be the case in the absence of objective neurological findings.

(2) *Migraine* is familiar to all physicians as a functional headache causing real disability. Rather frequently, however, it is not the classic type as it may occur almost daily, have no visual phenomena and no vomiting, only nausea. Gynergen is still the best treatment for migraine, especially when given *hypodermically*, in doses of 0.5 to 1.0 mg. The patients can easily be taught to give themselves the drug as diabetics give themselves insulin. In many cases that obtain little relief from the *oral* use of the drug, great relief is obtained from giving it *hypodermically*. Cafergone tablets, which contain ergotamine and caffeine, are useful, as is D. H. E. 45. Mesantoin, one of the anticonvulsant drugs, is definitely helpful in *hereditary* migraine, giving gr. 1.5, three to four times a day. Intravenous 50 per cent magnesium sulphate, beginning with 1 c.c. and increasing daily to 5 c.c., affords relief to many migrainous patients not relieved by Gynergen.

(3) True *histamine* headache is much rarer than migraine but nevertheless a real entity *sui generis*. Exquisite burning pain develops in one eye (which becomes injected), associated with lacrimation and erythema about the eye and an occluded nostril on the side of the pain. Ingestion of alcohol almost invariably brings on the pain so that these patients willingly become teetotalers, if only from necessity! A few m. of adrenalin, or of D. H. E. 45, hypodermically, should abort the spontaneous histamine headache and a series of daily intravenous injections, usually five or six, of .275 mg. of histamine acid phosphate in 250 c.c. of NSS, given



slowly over 2 to 3 hours' time, usually affords long, if not permanent, relief. Both this type of headache and migraine seem to be due to vascular imbalance of the intracranial vessels.

(4) *Allergic* headache occasionally is met with; elimination of the offending allergen or allergens suffices to prevent further attacks; often it is one or more foods.

(5) *Menopausal* headache: Oftentimes, migraine (in the earlier decades) is transformed into menopausal or post-menopausal headache in the fifth decade of life. Such cases are difficult to treat. Occasionally hyperostosis frontalis interna (Sherwood Moore's syndrome) is seen on the skull x-ray films. This is a metabolic disorder. The judicious use of pituitary and ovarian extracts relieves only the occasional patient. Mild sedation relieves others: aspirin; phenacetin; phenobarbital with tincture of belladonna is a useful combination, as are Bellergal or Cafergone tablets.

(6) Sluder's sphenopalatine neuralgia is a curious, functional type of facial and head pain extending unilaterally over the face, forehead, mastoid area and neck. In our experience it is rarely relieved by cocaineization of the sphenopalatine ganglion but our reliance is mostly on the mild sedatives mentioned above in discussing menopausal headache.

(7) *Post-puncture headache* may be very distressing and of long duration. The best treatment by far is to remain in bed until the headache is no longer felt in the erect position. Caffeine is perhaps the best drug for its relief. It is significant that in patients who have had spinal anesthesia for lumbar protruded disc operations and who remain in bed for 10 to 14 days thereafter, headache is rarely, if ever, complained of when the patient becomes ambulatory.

(8) *Eyestrain*. Not rarely such patients—children and adults alike—are seen in neurological clinics. The key to the diagnosis is that the headache is an afternoon or evening occurrence, usually after using the eyes a great deal in school or in close work of any kind, and the correctness of the physician's impression is proved by the relief obtained by the fitting of proper glasses.

#### ORGANIC

(1) *Acute generalized febrile illness*, especially typhoid, paratyphoid and undulant fever, influenza and grippé. Malaria may induce chronic headache—even years later. The headache in psittacosis is disabling and severe and the same is true occasionally in Rocky Mountain spotted fever.

(2) *Chronic disease*, especially hypertension. The degree of headache in hypertension is not necessarily directly proportional to the height of the blood pressure and some internists today feel that headache in hypertension is usually psy-

chogenic. Certainly it is true that many hypertensives—particularly of the essential type—have little or no headache and the elevation of blood pressure is discovered only in a routine examination for insurance or at the time of periodic physical examination by the family physician, the patient being without disabling symptoms at the time.

(3) *Glaucoma*: Severe pain—unilateral—in the eye and supraorbitally, perhaps at one time chronic, and occasionally — especially in early morning hours or at night after retiring—developing as an acute exacerbation, must always be kept in mind, especially in patients in the later decades of life. Expert ophthalmologic aid (possibly an emergency operation) is needed in such cases to preserve vision.

(4) *Tic douloureux*, involving the first or ophthalmic division of the trigeminal nerve, may be described occasionally as headache by the patient. In these cases, as in all individuals with tic douloureux, the peripheral and paroxysmal nature of the pain, brought on by pressure at a "trigger point" is the key to the diagnosis. With first division involvement, the trigger point is almost invariably in the eye brow at the point of emergence of the supraorbital nerve from its foramen. Alcohol injection or avulsion of this peripheral branch of the fifth nerve suffices for complete relief of the pain.

(5) *Cervical arthritis* and *occipital neuritis*: Not rarely, a middle-aged or elderly patient complains of headache which is located posteriorly, unilaterally or bilaterally. Examination often discloses very tender greater and lesser occipital nerves (to palpation by the examiner's thumb) and limitation of motion in the cervical spine, especially in backward or side-to-side rotation of the head. X-ray examination usually shows cervical arthritis of greater or lesser degree. If novocaine injection of the involved nerves in the occiput affords relief for several hours at least, avulsion of the appropriate nerves through a small transverse incision in the occipital scalp (novocaine anesthesia) should result in cure.

(6) *Temporal arteritis*, a rather rare affection: The relatively high incidence of concomitant or preceding mouth infection, plus the fact that the initial pain may occur in the teeth or jaw, suggests the possibility of involvement of neighboring arteriosclerotic arteries by direct extension of local infection. The scalp vessels are tortuous, swollen and nodular. The temporal artery is most frequently affected. Microscopically, the disease is a pan-arteritis, which cannot be distinguished from peri-arteritis nodosa. The pain consists of a severe, throbbing, steady headache, associated with hyperalgesia of the scalp. Pain on mastication is an initial symptom in some patients. Immediate relief



usually follows excision of a segment of the involved temporal artery. The disease is self-limited, lasting for one month to over a year and is non-fatal, all cases reported to date having recovered.

(7) *Meningitis and subarachnoid hemorrhage*: These entities occasionally cannot be distinguished from each other without lumbar puncture. We are not referring now, of course, to the acute fulminating prostrating cases but to patients that may still be ambulatory with mild symptoms only. Rigidity of the neck is the outstanding symptom and lumbar puncture reveals either cloudy or blood-tinged fluid; in benign lymphocytic meningitis, the fluid may be grossly clear and colorless but microscopically 100 or more lymphocytes per cu. mm. are seen in the fluid. Another characteristic of both these affections is moderate or marked photophobia. Luetic (meningo-vascular) meningitis must be ruled out by serologic studies of the blood and spinal fluid.

(8) *Encephalitis*: This entity is almost always associated with low grade fever, lassitude or stupor and, frequently, with diplopia from paralysis of one or more of the extraocular muscles. Curiously enough, the spinal fluid may show little or no cellular increase but should invariably show an elevated spinal fluid sugar (over 80 mg. per cent) in the presence of a normal blood sugar. Many cases initially designated as encephalitis ultimately are proved to be cases of brain tumor.

(9) *Post-traumatic headache* tends almost invariably to subside with time unless a serious complication is developing, such as a chronic subdural hematoma. Prostigmin bromide, 15 mg. t.i.d., is valuable if given soon after injury. It is often, but not invariably, associated with vertigo. Strangely enough, it may almost be said that the severity of the post-traumatic symptoms is often in inverse proportion to the severity of the initial head injury. Some of the very severe injuries with compound depressed skull fracture and contusion of the brain beneath, or of middle meningeal hemorrhage with marked cerebral compression, cause little or no headache after the patients become ambulatory.

(10) *Skull diseases*, especially eosinophilic granuloma and osteomyelitis. Eosinophilic granuloma is a curious bone disease (involving other bones, occasionally, in addition to the skull) in which exquisite localized tenderness is present at a specific point in the skull. X-ray examination reveals the characteristically punched-out rarefied area in the skull; x-ray treatment or surgical excision should result in cure.

Osteomyelitis of the skull is due to four chief causes: extension from contiguous infected paranasal sinuses or mastoid, post-traumatic (compound

skull fracture), or metastatic from elsewhere in the body. X-ray examination is slow in revealing the disease and occasionally excision of involved bone in the frontal or temporal region is necessary (extension from the frontal sinus or mastoid) before x-ray evidence of osteomyelitis is present. Undoubtedly enough, since the advent of the sulfa drugs and the antibiotics, the incidence of these infections has been considerably reduced. One of the most extensive cases of osteomyelitis of the skull seen by the writer occurred incident to a human bite. Eventually the greater portion of the skull vault had to be removed before cure was obtained.

(11) *Intracranial aneurysm*: These cases typically have severe unilateral frontal headache and eye pain with hypoesthesia of the frontal scalp on the side of the pain and a third nerve palsy, characterized by ptosis of the lid, a dilated pupil and paralysis of inward gaze. The lesion is verified by diodrast injection of the carotid artery in the neck with visualization of the intracranial vessels on the angiograms. Ligation of the carotid in the neck, or intracranial clipping of the aneurysm itself, whichever may be required in the individual case, is carried out. These are serious lesions and may or may not be expected by or be associated with a massive subarachnoid hemorrhage. The third nerve palsy is not present in every case of intracranial aneurysm, thus making localization of the lesion more difficult.

(12) *Headache from paranasal sinus disease* is often so diagnosed when it has little or nothing to do with the patient's real disability. Sinus headache, especially of the acute variety, is typically present in the morning, after the patient has been recumbent in bed for many hours and the sinuses are distended with purulent secretion. Therefore, unless complete blockage is present, it typically tends to subside in the afternoon or evening. X-ray examination in such cases should show definitely cloudy sinuses requiring drainage by the otolaryngologist. In the more chronic cases in which a certain amount of adequate drainage is already present, the importance of the "sinusitis" as a factor in the patient's headache is not so obvious, and may be misleading.

(13) *Brain tumor and other causes of increased intracranial pressure*: This particular headache also occurs typically in the morning (often associated with projectile vomiting) as the increased intracranial pressure is greater after the patient has been recumbent and tends to subside later in the day. Headache from brain tumor frequently is not the chief or presenting symptom but may be superseded by a complaint of diplopia, weakness of one side of the body, or convulsions. If the patient is asked several times, he may finally admit that he

has dull morning headache, often relieved in the early stages by a cup of coffee or an aspirin tablet. This is in marked contrast to many of the patients with *functional* headaches who complain bitterly during the entire history-taking interview of one symptom only—headache! Excruciating headache in brain tumor usually occurs only when ventricular block has developed.

The key to the diagnosis of brain tumor is the presence of *progressive loss of neurologic function* or the *progression of disabling symptoms*, such as headache, visual failure, convulsions, ataxia, etc. Brain tumor symptoms may be apoplectic in onset if acute ventricular block or hemorrhage in the tumor has occurred. Any real suspicion of a brain tumor calls for an air injection to settle the diagnosis. Occasionally the air injection should be *repeated* weeks, months, or even years later, if the symptoms warrant it, as even air injections in an *early* case of brain tumor may be normal, or equivocal at best.

Finally, the following three specific cases, which eventually proved to have serious surgical intracranial lesions, are briefly cited to stress the importance of an attitude of wariness in investigating every case of headache, especially those in which the original impression of the examiner was "functional headache":

#### Case I

A white man, aged 42, was admitted with a chief complaint of headache of one year's duration. There had been no vomiting, convulsions, diplopia or other neurological complaints. Examination disclosed no neurological abnormality, the optic disks being well outlined, and a functional complaint was considered. An encephalogram—initial spinal fluid pressure of 90 mm. water—showed incomplete filling of the ventricles, which were dilated. The patient had complete syncope immediately afterwards with profuse sweating and bradycardia which responded to coramine and neosynephrin. A ventriculogram was then made, and internal hydrocephalus demonstrated. Immediate suboccipital craniectomy (4/26/45) (Dr. C. C. Coleman) disclosed an ependymoma of the fourth ventricle which was completely removed so far as could be determined grossly. Almost five years later, the patient was doing well and without signs of recurrence.

#### Case II

A white boy, aged 16, was admitted August 11th, 1949. He complained of headache of 15 months' duration. The neurological examination was normal. The optic disks were well outlined and it was our initial impression that he had a functional complaint. He was a normal-sized boy of normal intelligence and head size, and in the usual grade of school for his age. An encephalogram was done which showed poor ventricular filling but the ventricles were very much larger than normal. Several days later, a ventriculogram was done (300 c.c. fluid was removed) which demonstrated an enormous internal hydrocephalus with very thin cerebral cortex. It was difficult to see how normal or near-normal intelligence would be possible with so thin a cerebral cortex. Immediate cerebellar exploration (Dr. C. E. Troland) revealed an atresia (congenital) of the foramina of Magendie and Luschka resulting in a tremendous dilatation of the fourth ventricle as well as the lateral and third ventricles. The fourth ventricle was widely open-

ed with a forceps and the patient improved immediately. On January 20th, 1950, a Torkildsen procedure was carried out to relieve ventricular block which had again developed in the posterior fossa. Thirteen days after this procedure, dye in a lateral ventricle was readily recovered in the lumbar subarachnoid space, demonstrating unblocking of the ventricular system. The patient was discharged much improved.

#### Case III

A 61-year-old white man, was first seen (office examination) October 6th, 1945. His chief complaints at this time were attacks of vertigo and headache. The optic disks were well outlined and there was no aphasia, weakness of any extremity or astereognosis. There was no evidence of any increased intracranial pressure and the initial impression was, possibly, Meniere's disease, as the dizzy attacks were sudden, and there was slight diminution of hearing in the right ear. As the attacks were not typical of the surgical type of Meniere's disease, potassium chloride was prescribed. The patient returned to the hospital in January, 1949, having developed left-side Jacksonian convulsions. A ventriculogram disclosed marked ventricular deviation to the left, caused by a large tangerine-size meningioma in the right parietal convexity which was completely removed by craniotomy (Dr. J. M. Meredith) immediately after the ventriculogram. The day following, it was necessary to re-elevate the bone flap to evacuate a sub- and extra-dural postoperative hematoma, the brain having been concave at the time of closure of the original craniotomy of the day before. He recovered promptly except for a series of convulsions four months later, when he was hospitalized and responded promptly to anticonvulsant therapy. There were no signs of tumor recurrence at that time and the convulsions were interpreted as due to gliosis of the underlying hemisphere, incident to the long-standing benign tumor in the right parietal lobe—a not uncommon development. He has been doing well in recent months on anticonvulsant therapy.

#### A SIMPLE AND EFFECTIVE TREATMENT OF EXTERNAL OTITIS (I. L. Oels, Annapolis, in *Jl. A. M. A.*, April 29th)

Of 100 consecutive cases of external otitis, *B. pyocyaneus* was present in 45%; of 69 cases in 65.

In the past three years I have treated 248 ears in 165 patients, without a single failure. In every instance the discharge stopped within a few hours of the institution of treatment, the foul odor of infected, macerated skin was lost and the swelling subsided promptly. Most of the ears were draining. Some were swollen, red and tender, with no discharge. Some exhibited acute flare-ups of old infections, usually superimposed on a seborrheic dermatitis. Twenty per cent of the patients with acutely swollen ears without discharge failed to get relief, or had increase in pain, until continuous application of wet dressing had been made for 48 hours. These patients were given codeine or other analgesic agents to cover the discomfort.

Treatment: Clean the debris or discharge from the canal, using hydrogen peroxide, when the ear is clean a snug cotton wick is inserted, and this is then saturated with a 2% acetic acid solution.

Five patients in this series had a chronic skin disease with suprimposed infection that would relapse within a days of removal of the wick. Three of these had seborrheic eczema, one acne rosacea and one atopic eczema. These patients were comfortable and without pruritus, or discharge, as long as a wet dressing was used. Their infections were refractory to the usual ointments and lotions, and they were referred to dermatologists.

The trouble with a lot of smart folks is that the smartness is in they wrong place.

## Intravenous Procaine Therapy

An Evaluation of the Results in 245 Cases of Various Pain Disorders

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**THIS REPORT** on the intravenous use of procaine hydrochloride is based on 447 such infusions in 245 patients. The study has been conducted on inpatients and public and private outpatients. As a rule, only patients with demonstrable organic changes associated with pain have been treated.

Procaine hydrochloride was synthesized and introduced by Einhorn in 1905 as a less toxic substitute for cocaine. It has had wide use as a local anesthetic, but because of occasional severe toxic manifestations, injection of the drug into the blood stream has been feared. During recent years the literature has contained many reports on the intravenous use of procaine hydrochloride. Eggleston and Hatcher,<sup>1</sup> in a good review of the subject, pointed out the relative safety and rapid destruction of the drug when given slowly in dilute solution. Its use has been described in the treatment of tinnitus aurium,<sup>2</sup> in the treatment of cardiac arrhythmias during anesthesia,<sup>3</sup> for the relief of pruritus,<sup>4</sup> for the relief of post-operative pain,<sup>5,10</sup> in delayed serum sickness,<sup>7</sup> in allergic reactions,<sup>6</sup> and for the relief of pain associated with acute burns,<sup>8</sup> trauma and arthritides.<sup>11,12,13</sup> Recently Marchand and Riemer<sup>14</sup> reported a case of lower-nephron nephrosis, complicating heat stroke in which recovery occurred following repeated infusions of intravenous procaine.

Although no definite rationale for the use of procaine hydrochloride by the intravenous route has yet been recorded, it appears to be of therapeutic value in certain pain syndromes and sufficient clinical reports are available to warrant its use as a therapeutic procedure in office and other practice. For a discussion of the chemistry and the pharmacology the reader is referred to the reports by Isenberger,<sup>15</sup> Brodie et al.,<sup>16</sup> Graubard et al.,<sup>17</sup> Goodman and Gilman,<sup>18</sup> and Jacoby et al.<sup>21</sup>

**Method of Treatment.**—Each patient is given 250 to 300 mgm. of procaine hydrochloride in 300 c.c. of normal saline over a period of 20 minutes. Sixty, 90 or 120 mgm. of sodium phenobarbital is given intramuscularly routinely, 20 to 30

minutes before therapy, or intravenously immediately preceding therapy.

The criteria for evaluation of results are the relief of pain, restoration of function, and objective signs of improvement. Two hundred and forty-five patients with acute and chronic painful disorders, as stated, were given a total of 447 intravenous infusions of procaine by the method described above. The results were as follows:

**Serum Sickness.**—Four patients with delayed serum sickness obtained uniformly good results. Two of the four presented severe extremity edema, urticaria, joint effusion and arthralgia that did not respond to large doses of opiates or other measures. Following intravenous procaine, relief of pain and urticaria was almost immediate and all symptoms subsided in 12 to 24 hours.

**Torticollis.**—Ten patients with acute torticollis obtained immediate and satisfactory relief of pain with improvement in motion. In two of these cases because of unsatisfactory relief of symptoms at the end of 12 hours an additional infusion was given, with relief.

**Non-specific Low-back Pain.**—Thirty-three patients with non-specific low-back pain, five with pain in the dorsal region, were treated with inconsistent results. In general those with localized points of tenderness, "trigger areas," did not respond as well to intravenous procaine therapy as has been seen in the local use of procaine. Of the 33 with non-specific back pains, ten had what were felt to be good results in that they had relief of pain and improvement in motion. Seventeen had only fair results in that the relief of pain was incomplete and transient. Six had no relief of symptoms.

**Acute Trauma without Fracture.**—There were 35 cases of acute trauma without fracture. Of this group four had excellent results with complete relief of pain immediately following infusion. There were 19 with good results in that they had substantial relief of pain and satisfactory return of function. There were seven with satisfactory but in no way complete relief of pain. Five had no improvement.

**Traumatic Myositis Ossificans.**—There were two patients (both young white male football players), with traumatic myositis ossificans in what was considered a subacute stage, both patients were severely handicapped and had been for two and five weeks, respectively. The results were excellent in that following infusion both patients had relief

<sup>‡</sup>Aided by a Fellowship from the National Foundation for Infantile Paralysis.

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Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.



of pain with improvement in motion. One of the patients was given seven infusions over a period of ten days with complete restoration of motion and absorption of the calcification. The other patient was given three infusions over a period of six days with complete relief of symptoms. Both were back playing football at the end of one week.

*Bicipital Tenosynovitis and Subacromial Bursitis.*—There were 12 patients with bicipital tenosynovitis of varying durations. Five had good results, five fair, and two poor. There were 26 patients with subacromial bursitis. Eight had relief of pain and increase in motion following two infusions. Fourteen had satisfactory but transient relief of pain with increase in motion following four to six infusions.

*Hand-Shoulder Syndrome.*—There were five patients with vasomotor disturbance in the hand and shoulder, commonly known as the hand-shoulder syndrome. Two had partial relief of pain with some increase in motion; three showed no appreciable improvement.

*Phantom Limb.*—There were four patients with symptoms of phantom limb. Two had relief of pain and two had no relief of pain.

*Ruptured Intervertebral Disc.*—There were 11 patients diagnosed as having a ruptured intervertebral disc. None was improved.

*Postoperative Pain.*—Twenty-four patients were given intravenous procaine hydrochloride for postoperative pain following orthopaedic procedures. Six had excellent relief of symptoms and 15 had partial but transient improvement of insufficient degree to be conclusive. Three had no relief of pain.

*Malignant Lesions.*—There were nine patients with malignant lesions involving bones. Five had temporary relief of pain that was not particularly striking and four had no relief of pain.

*Sprained Ankles.*—There were 12 patients with sprained ankles. Three had relief of pain that was satisfactory; seven had only partial relief; and two were unrelieved. The results in this group were not as satisfactory as is seen in the patients treated by local procaine injection.

*Fractures.*—Eighteen patients with fractures were given intravenous procaine for postreduction pain. Two were relieved of the pain. The pain was modified to some extent in 12, and four had no improvement.

*Rheumatoid Arthritis.*—As an experiment, 14 patients with rheumatoid arthritis were given intravenous procaine. Eight of these 14 were being treated with casts or traction for correction of deformities. There was sufficient relief of pain to assist in correction of the deformities and to keep the patient reasonably comfortable. Of six patients with acute exacerbations of rheumatoid arthritis, five had partial but transitory relief, one had no

improvement.

*Hypertrophic and Traumatic Arthritis.*—There were ten patients with hypertrophic arthritis and four with traumatic arthritis. One was relieved of pain; four had partial but only transitory relief of symptoms; nine showed no improvement.

*Tennis Elbow.*—There were six patients with bursitis of the elbow, "tennis elbow." One had complete relief of symptoms; two had partial relief; three had short transitory relief.

*Calcaneal Bursitis.*—Of three patients with calcaneal bursitis only one had relief of symptoms, and that incomplete.

*Thrombophlebitis.*—Two patients with postoperative thrombophlebitis showed striking improvement with decrease of edema, relief of pain, and decrease of tenderness.

*Diabetic Neuritis.*—One patient with diabetic peripheral neuritis experienced no improvement.

*Reactions.*—Graubard<sup>19</sup> reported 1,954 infusions without serious reaction. Ameville<sup>6</sup> reported four instances of mild reactions in more than 5,000 intravenous injections of procaine hydrochloride. A non-fatal anaphylactic reaction occurring with intravenous injection of procaine has been described by Schiff.<sup>20</sup> Idiosyncrasies to the drug are on record and death following its administration has been reported.<sup>9 22 13</sup> Toxic effects depend on total dosage, speed of administration, and concentration of the solution. Seven instances of mild toxic symptoms occurred in the 447 intravenous infusions in this series. These were uncomplicated and without morbidity or mortality. Four of the seven occurred in patients in whom no premedication of sodium phenobarbital was given. The symptoms of toxicity included apprehension, mild respiratory distress, a feeling of fullness in the chest. None of the patients required counteractant drugs. As a precaution against possible reaction sodium amytal or sodium pentothal should be available for immediate intravenous administration if needed. In order to establish some degree of control in this study a series of 40 patients was treated initially with 250 c.c. of normal saline without premedication. In no instance was any improvement noted. Each of this group was then given the usual infusion of procaine and reevaluated (Chart No. 1). In order to establish some control as to the effect of the phenobarbital, a group of 45 patients in whom an initial skin test for sensitivity to procaine was carried out was treated intravenously with procaine hydrochloride without previous sodium phenobarbital. No variation in results was seen.

The results of the therapy seem to fall into a fairly definite pattern for the most part, but often show unexplained variations. Treatment is repeated if necessary, depending on results. If no improvement is noted either in function or relief of pain,



CHART No. I

*Evaluation of Results in 245 Patients Treated With Intravenous Procaine*

Diagnosis	No. Cases	Relief of Pain				Total No. R	Avg. No. R
		Immediate and Prolonged	Fair but Transient	Little or None			
Serum Sickness	4	4			7	2—	
Acute Torticollis	10	8	2		12	1—	
Low Back Pain	33	10	17	6	60	2—	
Acute Trauma without Fracture	35	23	7	5	59	2—	
Traumatic Myositis Ossificans	2	2			10	5	
Biceps Tenosynovitis	12	5	5	2	29	2—	
Subacromial Bursitis	26	8	14	4	46	2—	
Hand-shoulder Syndrome	5		2	3	28	5—	
Phantom Limb	4	2		2	6	1—	
Ruptured Disc	11			11	13	1—	
Postoperative Pain	24	6	15	3	38	1—	
Malignancy	9		5	4	27	3	
Ankle Sprain	12	3	7	2	12	1	
Postreduction Fracture Pain	18	2	12	4	27	2—	
Rheumatoid Arthritis	14	8*	5	11	29	2—	
Hypertrophic Arthritis	10	1		9	16	2—	
Traumatic Arthritis	4		4		7	2—	
Tennis Elbow	6	1	2	3	11	2—	
Calcaneal Bursitis	3	1		2	5	2—	
Thrombophlebitis	2			1	44	2	
Diabetic Neuritis	1			1	1	1	
Total	245	86	97	62	447		

\*During wedging and traction for correction of deformities.

## CHART NO. 2

## Control Series Results in 40 Patients Using Normal Saline

Diagnosis	No. of Cases	Normal Saline		Procaine HCl	
		Pain	Function	Pain	Function
Serum Sickness	1	No Change	No Change	Relieved	Improved
Torticollis	6	No Change	No Change	Relieved 6 good	Improved
Low Back Pain	7	No Change	No Change	Relieved 5 good 2 fair	Improved
Soft Part Trauma	17	No Change	No Change	Relieved 11 fair 6 good	Improved
Traumatic Myositis Ossificans	1	No Change	No Change	Relieved	Improved
Biceps Tenosynovitis	5	No Change	No Change	Relieved 2 good 3 fair	Improved
Malignancy	2	No Change	No Change	Relieved 3-6 hrs.	
Rheumatic Arthritis (Traction)	1	No Change	No Change	Relieved fair	Improved

as a rule therapy is not repeated. With partial improvement infusions are repeated if additional benefits are derived.

**Conclusion.**—Technique and results of intravenous procaine hydrochloride therapy in 245 patients with various pain syndromes are reported (Chart No. 2). The intravenous use of the drug is of clinical value in relieving pain.

The best results were seen in those patients with traumatic myositis, acute torticollis, or delayed serum sickness. In these groups the relief of pain was immediate, pronounced, and of long duration. Results were not as satisfactory in other pain syndromes.

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#### Discussion

DR. M. A. PITTMAN, Wilson, N. C.: Most of our patients come for the relief of pain in arthritis, postoperative and traumas complicated by fractures. Dr. Baker has discussed practically all the conditions for which the drug is used with the exception of one or two.

1. *Obstetrics*—Allen, Johnson and Gilbert reported 32 cases in which they used intravenous procaine advantageously. Procaine affects sensory nerves more quickly than motor nerves thereby diminishing pain without interfering with uterine contractions.

2. *Anesthesia*—Bettrick and Powers reported on 400 cases in which procaine was given intravenously as an adjunct in general anesthesia. They claim it lessened coughing, decreased cardiac irritability and inhibited sweating.

3. *Arthritis*—Dr. Baker reports 24 cases with relief of pain in only nine. Graubard reports 165 cases with a higher percentage of relief from pain. The only difference in the technique is that Graubard used vitamin C with all procaine infusions. He claims that the corrected deficiency of the vitamin C common to arthritic patients lessened the toxic side effects of procaine and rendered it more efficient.

4. *Action of Drug*—The drug is an analgesic and not an anesthetic. At no time does the patient become unconscious. It causes no change in blood pressure, pulse rate or blood chemistry. It is excreted in 20 to 30 minutes. Then how does it give relief of pain in some cases lasting 12 hours to 12 days? It has been shown that the quick relief of pain often obtained is due to the fact that procaine administered intravenously is found to be present in traumatized or inflamed tissue in a concentration eight times stronger than that found in normal tissue. It is, therefore, going to exert a local analgesic effect. In addition the real source of pain in traumatized areas is probably vasospasm and muscle spasm, each of which tends to perpetrate a vicious cycle. The drug tends to interrupt one phase of this cycle and by so doing breaks the entire cycle. This may explain why relief of pain and increased mobility are often obtained far beyond the time in which procaine could exert a local anesthetic action.

*Toxicity*—It has been shown that reactions from intravenous use occurs only when (a) the solution is too concentrated and (b) when given too fast. It is good to know the "procaine unit," but for all practical purposes a 0.1% solution should not be given faster than 12 c.c. per minute, or simpler still—160 to 180 drops per minute.

The patient should always be tested for sensitivity by injecting one or two drops of 2% procaine under the skin or using the eye test, waiting 15 minutes for a reaction. Reactions are rare but the test should always be done. Pentothal sodium solution should always be at hand and injected in case of a reaction.

I believe with these precautions the drug is safe and will eventually be used in the home as well as in the hospital.

I want to thank Dr. Baker for allowing me to discuss this paper.

#### "BENADRYL" GOOD TREATMENT FOR OXYURIASIS

(O. H. Siung, Medical Officer of Health, Wallsend-on-Tyne, in *British Med. J.*, April 8th)

Attention was recently drawn by an observant mother to the case of her asthmatic child—a girl of seven—who had been treated with "Benadryl." After three weeks' medication not only did the severity of the nocturnal dyspnoea abate but a threadworm infestation disappeared. Taking his cue from this observation Siung decided to treat a number of cases of oxyuriasis; 10 such patients, ranging between the ages of six and 12, were treated.

The parents were instructed to examine their children an hour after retiring each night. It was ascertained that worms ceased to appear near the perineal region between the third and the seventh day after the beginning of the course, in the majority they had disappeared by the fifth.

A suitable dosage of benadryl in emplet form for the treatment of oxyuriasis is as follows:

Age two to five, 50 mg. once a day (one emplet) for 10 days.

Age six to 12, 50 mg. twice a day (two emplets) for 10 days.

Over 12 years, 50 mg. thrice daily (three emplets) for 10 days.

Emplets must be swallowed whole; division or chewing lowers efficacy. Difficulty was encountered in getting patients to swallow it, but would do so when the emplet was enclosed in a morsel of cake.

#### FAMILIAL MENTAL DEFICIENCY

(G. A. Jervis, Thiells, N. Y., in *J. Nervous & Mental Dis.*, May)

The clinical picture is one of mental and cerebellar deficiency. Mental defect is congenital or develops within the first year of life, is usually of marked degree although occasionally milder. Cerebellar signs are impairment of both equilibratory and non-equilibratory coordination, often inconspicuous and tending to remain stationary for many years, even to improve.

Three sibs are described showing a clinical picture characterized by mental deficiency and manifestations of cerebellar dysfunction. The condition was apparently congenital or developed within the first year of life.

Pathological examination of one patient showed extensive degeneration of the granular layer and, to a less degree, of Purkinje's cells. These exhibited peculiar alterations of both dendrites and axons. The inferior olives were involved while the central white matter of the cerebellum, the dentate nuclei, the pons and the red nuclei appeared normal.

These cases, and a few similar ones published in the literature, appear to constitute a fairly well-defined type of cerebellar degeneration exhibiting common clinical, pathological and etiological features.

#### PITRESSIN AND MYOCARDIAL INFARCTION

(F. R. Wittlesey, Morgantown, in *W. Va. Med. J.*, Feb.)

Within the past few years I have seen three cases in which, soon after the administration of pitressin, a major coronary infarction took place.

Physicians at the Mayo Clinic have reported four cases in which severe myocardial ischemia followed the use of pitressin, a routine diagnostic procedure—three died. It is easy to confuse coronary disease with gallbladder disease.

It would seem wise to use no pitressin when gallbladder x-rays seem necessary.

# DEPARTMENTS

## HUMAN BEHAVIOUR

For this issue THOMAS F. COATES, JR., M.D.  
Member of the Staff of Westbrook Sanatorium

### "SUICIDAL GESTURES"

A RECENT newspaper account of the suicide of a middle-aged woman again forcibly reminds us of the fallacy of the dictum that those who talk of suicide and make "suicidal gestures" never really commit suicide. Within twenty-four hours of her death, this unhappy person had made two known suicidal gestures and on each occasion had been interrupted by the police and then turned loose. Within a few minutes after the last such "gesture," she plunged to her death from a tall building.

Such occurrences offer food for thought. Is it the duty of the authorities, of physicians, of people in general to take positive steps to prevent these happenings? Or should we adopt a *laissez-faire* attitude, piously fold our hands and say, "Poor thing, she's better off now. She was so unhappy"; or, "I might have been able to help her but she wouldn't agree to be treated."

In any discussion of suicide the question arises as to how to differentiate between the genuine suicidal attempt and the suicidal gesture. This is a problem that has baffled many investigators. Karl Menninger's formulation that suicide involves three elements—(1) the element of dying, (2) the element of killing, (3) the element of being killed—has been utilized by Raines and Thompson<sup>1</sup> in a recent study of suicide to make this differentiation. They state that all three elements should be present in a serious attempt, and that the absence of one should cast doubt upon the validity of the attempt. However, as they point out, investigation of these elements is extremely difficult.

All of us have suspected that many suicidal gestures represent attention-getting behaviour. However, it is probably true that another important factor is that this behaviour is a way of asking for help. I suspect that this motive is operative in almost every case that is apparently a deliberate failure. Positive action, resulting in adequate treatment for these patients, leads to cure and happiness for the patient and family in enough cases to make the effort worthwhile.

The prognosis for cure is dependent on the nature of the underlying condition, but electro-shock therapy offers an effective method of preventing suicide. The suicide rate is almost negligible in the cases of patients adequately treated by shock therapy. I know of one hospital that can point with

pride to a record of no suicides among patients since the use of electro-shock therapy was begun there ten years ago.

In conclusion, I should like to make the point that all patients attempting suicide—those making gestures and those making genuine attempts—deserve attention and help. Treatment is available which can prevent many unnecessary deaths and can restore to health many of the sick people who makes "gestures."

J. Captain G. N. Raines and Lt. Comdr. S. V. Thompson, (M. C.), U. S. N. *Digest of Neurology & Psychiatry*, Series XVIII, Feb., 1950.

## PEDIATRICS

ALBERT M. EDMONDS, M.D., Editor, Richmond, Va.

### PERTUSSIS TREATED WITH CHLORAMPHENICOL\*

THIS PAPER reports experience with chloramphenicol (chloromycetin) in the treatment of a severe epidemic of pertussis July to October in Bolivia. The majority of these cases were in the department of Cochabamba. Pertussis in this region is of high virulence, the death rate among children approaching double that in North America.

The conclusion of the authors after treatment with chloromycetin were that fever, when present, disappeared the second day of treatment, definite decrease in the number of paroxysms on the third day, with complete disappearance from the third to sixth day, a light cough remaining for several days, attributed to residual inflammation in the tissues.

In one case there was a brief relapse a few days after treatment was discontinued; the small dose was judged to be inadequate.

Spot check of patients by cough plate one week after treatment indicated that all were free of infection. A few children under six months of age had mild nausea. The capsules containing the drug were opened and the contents mixed with substances such as honey or orange juice for administration, and the resulting disagreeable taste may have caused the symptoms.

\*Abstracted from paper by E. H. Payne, M. D., et al., in *Jl. A. M. A.*, Dec. 31st, 1949.

### PROPHYLAXIS OF POISON-IVY DERMATITIS

MANY factors combine to determine whether or not poison-ivy dermatitis will develop in sensitive persons. Although there was a difference in incidence of the dermatitis between the untreated and the inoculated, over half the treated were affected. A physician should be able to extend far better prospects to a patient receiving painful inoculations.

This opening statement<sup>1</sup> attracts special attention because dermatologists have such good words for



inoculation.

In an appraisal of the efficacy of preventive inoculation of poison-ivy extract it must be repeatedly stressed that one is attempting to evaluate an effect on persons whose sensitivity is spontaneously fluctuating and whose contact with vegetation is never precisely the same. Encouraged by the apparently 100 per cent successful inoculation of 40 boys, one investigator proceeded to hand six of them poison-ivy leaves, which were held for only 30 seconds; dermatitis promptly developed in five of the six and was severe enough to necessitate hospitalization. The only boy who was unaffected was the only one who never had ivy-poisoning.

Rhus toxicodendron dermatitis is a condition dependent both on hypersensitivity of persons and adequate contact with offending plants. Even controlled studies, except in one report, did not regulate the intensity and duration of contact with poison ivy. When this was done, severe dermatitis promptly developed in all persons with a previous history of ivy poisoning despite previous inoculations with apparently successful results.

A study conducted under fairly controlled conditions showed that although men in an inoculated group had a slightly higher percentage of dermatitis than their associates who had received previous inoculations, the incidence in the latter group was too great to warrant use of preventive inoculations.

It is believed that previously favorable reports are largely based on inadequate exposure to offending plants, or inadequate numbers of subjects in a control group, or both.

This is just the season for evaluating our knowledge of how best to serve those miserable persons who come to us for relief from poisoning with vegetable irritants, principally those of poison-oak or poison-ivy.

Personal experience of this painful affliction in more than 50 summers convinces that the best measures are these:

1. Stay out of the bushes; if you must go into them, keep a wary eye for the 3-leaved fire.

2. In case of even suspected exposure, at the very first opportunity, change clothing completely, sending all discarded to laundry or dry-cleaner, and wash all exposed parts with lots of hot water and lots of soap, this followed with lots of alcohol. Dig nails into soap and clean out a number of times. Mop exposed surfaces with zinc sulphate 10 grs. to the oz. of water.

3. At the first evidence that inflammation has set in, paint the area with collodion.

4. Later a saturated solution of sodium sulfite with 5 per cent phenol and a few drops of a volatile oil, swabbed on.

1. R. J. Hoagland, West Point, N. Y., in *New Eng. J. of Med.*, Jan. 26th.

## OBSTETRICS

H. J. LANGSTON, M.D., Editor, Danville, Va.

### COMMON COMPLAINTS OF PREGNANCY

AN ARTICLE<sup>1</sup> made up of practical information on conditions which make up a part of our daily work is abstracted.

Many of the common complaints of pregnancy have no direct relationship to the pregnancy. Many times a pregnancy will aggravate complaints already existing. Women in best condition have fewest complaints.

First give an examination including basal metabolism, blood counts, RH factor, Wassermann, urine examination, b. p., chest x-ray, throat and chest examination and pelvic examination; correct all that is wrong as soon as possible. Nausea and vomiting are less frequently encountered as the years go by. In cases of hyperemesis, we give luminal, gr. 1½, number 12, ½ tablet before arising and the other half q. s. in extreme cases whole tablet. In addition large doses of Vitamin B complex IV, for 3 or 4 d. until completely relieved. If nausea persists, add 20 c.c. 50 per cent glucose to the Vitamin B and give IV every two or three days until relieved. Elixir of donnatal is of great value for checking excessive secretion in the mouth.

Discharge due to a superficial erosion of cervix—cauterize early. We urge vinegar douches every day throughout the prenatal period. For Trichomonas, Devegan tablets in the vagina after douching. For monilia, douches with tincture of iodine, dr. 1, to pint of water, instead of the vinegar. This followed by a Devegan tablet. Most of these cases are mixed infections. Pain in the lower back and pelvis and legs during the latter months is usually relieved by a properly fitted maternity corset; the corset serves no useful purpose except for comfort.

Cramps in the calf and feet are relieved by increasing the calcium by mouth or a dose or two of calcium gluconate IV. Severe uterine cramps will often respond to the same treatment. All of our patients take at least two nutritive capsules a day.

Frequency and dysuria in the latter month is often relieved by a properly fitted corset. If we find pus in a catheter specimen, we will give Mandelamine, two tablets p. c. and h. s. for 10 days, leaving off all citrus fruits while taking; discontinue all other medicine, such as calcium. Swelling in the vulva, cut the intake of salt, investigate for other signs of early toxemia.

Phenaphen is the choice for the relief of ordinary headaches in pregnancy. Insomnia: half a tablet of luminal at bedtime.

Constipation: argarol; if objectionable, bilron

1. L. C. Northrup, Tulsa, in *Jl. Okla. State Med. Assn.*, April.

capsules.

Heartburn: gelusil liquid, two dr. before breakfast, between meals and h. s. for a few days will be appreciated.

Afterpains: ergotrate tablets q. 4 h. for the first 24 hours, then b.i.d. for six to eight days.

Painful stitches can be best prevented by careful suturing.

A midline episiotomy is easier to repair and gives less postpartum discomfort than any other type. Heavy sutures placed through the skin and tied tightly are painful. Use no tension sutures of any kind. Use triple O chromic catgut: *stitches all subcutaneous or subcuticular*, not tied tight.

Early ambulation helps. A little diathene ointment on the perineum and around the rectum helps to relieve the painful hemorrhoids and any irritation that might occur along the line of incision.

To prevent painful and engorged breasts in patients who are not going to nurse the baby stilbestrol 25 mg., one tablet a day for 10 days. If the nipples become cracked, discontinue nursing until they are healed.

Inability to void: allow to sit on the stool.

At the end of two weeks if the uterus is not contracting down, give more ergotrate and start douches again.

At the end of six weeks the patient is given a complete final examination. If the uterus is not in perfect position, the patient is given a pentothal anesthetic and the uterus is placed in normal position and any erosion or damage to the cervix is cauterized.

## DENTISTRY

J. H. GUION, D.D.S., Editor, Charlotte, N. C.

### HYPERTENSION: IMPORTANCE OF DENTAL INFECTION IN ITS CAUSATION, AND OF DENTAL MEASURES IN ITS MANAGEMENT

Few, if any, names in medical science stand higher than that of Dr. Martin H. Fischer, Professor of Physiology in the University of Cincinnati for more than a third of a century, and large contributor to research in diseases of the cardiovascular-renal system.

See how definite are his opinions as to this condition of such enormous importance to all who have to do with human health and wellbeing.<sup>1</sup>

Vascular stiffness due to scarring and the deposition of calcium is beyond therapeutic help, but whatever remains of tonus in the musculature of the arteries and veins is not. Worry expresses itself in increase of muscular tone in the blood vessels as everywhere. Increase in body acid, as from hard work and cold, increases vascular tone. Coffee,

1. Martin H. Fischer, M.D., Cincinnati, in *New Orleans Med. & Surg. J.*, Mar.

adrenalin, digitalis and strophanthus behave similarly, but their prescription calls for common sense. The increase in cardiac efficiency brought about by digitalis, for example, needs to be balanced against its vasoconstrictor effects.

To favor vasodilation requires that the human organism live quietly in warm, fresh air. The addition of tincture of lobelia prolongs relief.

Bleeding sometimes helps, especially the circulatorily embarrassed. It should not be practiced in the obviously anemia. Either too much blood or too little space yields hypertension. Therefore the loss of a pint of blood or two even, by the otherwise physically fit, may be followed by an agreeable (and fairly lasting) sense of relief.

First cause lies in disease of the vascular tree, the product of repeated embolic infections, infarcting the coats (the media chiefly) of the larger blood vessels.

Not more than 10 per cent of the hypertensives are syphilitic. The rest are infected by other microorganisms; they are not the subjects of heredity, emotional instability, worry, whiskey or hard work.

The streptococcus is the favorite. And where might it be coming from? In 90 per cent of the clinical instances they lie in the teeth.

Proper judgment must be passed upon what appears in a mouth. Inclination is to refer diagnosis to the dental colleagues. It is better to do the job yourself. But do not go in immediately for x-rays, for your eyes and fingers are better tools. Carious, discolored, heavily filled, crowned, pegged, eroded, hypersensitive or hyposensitive, dead and pyorrheic or sclerosed teeth are all suspect. Use x-rays to substantiate your physical findings and to expose lesion hidden from the naked eye.

What happens to teeth is covered in the names of two pathologic processes—osteitis and/or arthritis (gingivitis). The situation commands that all efforts at surgical attack upon the teeth and/or their housings be guided by the laws of the orthopedist. Chronic foci of infection in the teeth or elsewhere require surgical eradication, which means the removal of offending teeth and of the areas of infection found in the alveolar processes surrounding them.

Properly executed, dental surgery removes almost at once a source of constitutional poisoning responsible for the too high "tone" of the blood vessels of the hypertensive. Do not tell the patient that you expect more—even though you will get it. The level to which hypertension can fall depends upon two factors: the reversible, or muscle spasm, and the not-so-reversible, or organic change (fibrosis, calcification). Proper mouth surgery usually yields not only arrest of progress in disease, but appreciable restoration.

The hypertensive with vascular breakdown requires for his care *the intelligence of a doctor and not that of many specialists*, for his illness is not that of days but of decades.

As often as not, grandmother's kiss starts the babe into the disasters of its own old age.

How about sodium chloride restriction therapy?

No matter where practiced or on what disease, it is wrong in principle and hurtful to the subject. It was initiated by Fernand Vidal in the early 1900's for the reduction of edema. Within the last decade or two it has found employment for the reduction of high blood pressure. When there is added to the element of sodium chloride restriction, that of the rice (carbohydrate) diet, things go downhill fastest of all. Of course, the blood pressure of the victim sinks. But nothing in the pathology of the patient is altered except for the worse. Put him back on sodium chloride and a square meal and in three days his blood pressure is back where it was before this therapy was started.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### BE ON THE LOOKOUT FOR CHRONIC MAXILLARY SINUSITIS

THERE can be no reasonable doubt that sinus disease, particularly maxillary sinus disease, is responsible for much prolonged pain, locally and in remote areas.

An Oklahoma specialist<sup>1</sup> writes to the point:

The ostium of the maxillary antrum is in the worse possible place to provide drainage, being located, when one is in the upright position, at the top of the sinus. All the other ostia are located either on the floor or sides of the sinuses, thus getting some help from gravity in clearing themselves.

In the non-allergic person 70 per cent of the chronic sinus infections are in the maxillary antrum. In the allergic person the ethmoids give equally as much trouble because of their tendency to polypoid degeneration.

Many cases of corneal ulcers, scleritis, retinochoroiditis and arthritis clear up promptly when an infected maxillary is ventilated or drained.

It is a wonder how so many good physicians pay little or no attention to a maxillary antrum so full of pus that no light can come through.

These antra fill up with mucopurulent material and occasionally empty themselves in the early morning, this being manifest by a great deal of clearing of the throat, coughing and expectoration. If, after this, such an antrum is irrigated only a few shreds of mucus may appear in the washings, whereas the washing an hour earlier would have

brought out a quantity of mucopurulent material.

If one antrum is darker than the other on transillumination, morning headaches clear up later in the day and a postnasal mucopurulent discharge; whether or not a lot of morning coughing, pain around the ear or neck, and a cold that hangs on more than a week—this is a chronic maxillary sinusitis, even if when irrigated one finds only mucous shreds in the washings.

For ten years Walls has irrigated all dark maxillary antra, the patient having headaches, postnasal discharge, chronic pharyngitis and laryngitis, pain over the antrum or around the same ear, or a painful spot in the neck with no tonsil disease to account for it.

If apparently cured by frequent irrigations, followed by penicillin instillations, it will stay dormant only until the next upper respiratory infection; if permanent drainage established at the lowest point possible, it will drain by gravity and clear up though somewhat slowly. Large doses of penicillin will help cure the acute exacerbation of a chronic sinusitis; you cannot cure a chronic maxillary sinusitis with penicillin, alone.

### SOURCES OF ERROR IN THE POSITIVE DIAGNOSIS OF GASTRIC CARCINOMA

THE 28 patients presented<sup>2</sup> were white men studied at Walter Reed General Hospital, a Tumor Center, by a closely-knit diagnostic and surgical staff. No patient was operated upon unless there was concerted approval of the radiologic, gastroscopic and surgical staffs, as well as unanimous written approval of a Tumor Board composed of the chiefs of all the hospital services.

Efforts in the investigation of gastric cancer have been directed largely toward the avoidance, at all costs, of overlooking an early lesion. Needless resection of a stomach as a result of diagnostic error must also be considered a *disease* from which the patient is to be saved. Although over-diagnosis of gastric cancer may be more commendable than under-diagnosis, every effort is to be put forward that neither the one nor the other result.

There are only two methods for the positive diagnosis of gastric cancer prior to operation—radiologic and gastroscopic—and no other test gives much specific information. It has become trite to point out that gastroscopy and roentgenography are complementary methods for examination of the stomach, and that there are valid practical objections to comparisons of relative diagnostic efficiencies. The practical demonstration of the two methods' complementary function was an important result of this study. *In only one of the cases did the x-ray and gastroscopic diagnoses of cancer agree*; the error was suggested although not

1. E. D. Palmer, M.D., Washington, in *Amer. J. Dig. Dis.*, July.

2. T. G. Walls, Oklahoma City, in *Jl. Okla. Med. Assn.*, May.



recognized in 10 who came to operation.

In spite of repeated x-ray and gastroscopic examinations, as well as a diagnostic attitude of skepticism and caution, an erroneous diagnosis of carcinoma of the stomach led to needless gastric resection in 11 cases.

In 17 other cases an incorrect diagnosis of gastric cancer was made, but the error was detected by additional x-ray and gastroscopic studies, and so the patient was saved the unnecessary operation.

Chronic antral gastritis was the disease most frequently mistaken for carcinoma.

Because in only one of the 28 misdiagnosed cases did the roentgenologist and gastroscopist agree on the diagnosis of cancer, the study emphasizes that an x-ray: gastroscopic discrepancy must engender great caution.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### HERNIA REPAIR WITH TANTALUM MESH

THE USE OF TANTALUM WIRE MESH in the repair of hernias has proven so satisfactory that attention again is called to it. When properly used it is well tolerated by the tissues and becomes enmeshed in them. It is particularly useful in strengthening defects in the abdominal wall due to the attenuation or absence of the fascial layers.

In a recent article,<sup>1</sup> Dr. Amos Koontz and Dr. R. C. Kimberly report experimental and clinical work which answers certain problems. Tantalum mesh was sutured with alloy steel wire without untoward effect or gross evidence of electrolytic action. It may be sutured with silk provided there is no tension which may cause the sutures to be cut; however, silk should not be used in the presence of contamination or infection.

Tantalum mesh may be used in the presence of gross infection, with expectation of good healing. Experimentally, tantalum mesh has been sutured next to the intestines with no untoward effect other than the formation of a few light adhesions.

*Editorial Note:* On several occasions we have sutured tantalum mesh with alloy steel wire with no untoward effect. In one case a tantalum mesh ventral hernia repair healed satisfactorily with an adjacent colostomy more or less continuously discharging over the open wound. In one case tantalum mesh gave effective support to the thoracic cage following resection of the superior portion of the clavicles, and the anterior portion of the first three ribs. In this case the mesh was covered by pedicle breast flaps.

1. Koontz, A. R., and Kimberly, R. C.: Tissue Reactions to Tantalum Mesh and Wire, *Ann. Surg.*, 131:666, 1950.

## THE RETICULO-ENDOTHELIAL SYSTEM

THIS discussion, says the author,<sup>1</sup> was planned as a means of correlating the known facts and chief controversial points in an effort to make clear which concepts about the system are based on fact and which on assumption.

The system is ubiquitous; it is capable of tremendous hyperplasia; it is composed of fixed and of free cells. The latter are complex cells that are capable of numerous biologic activities and yet that seem fairly independent of other systems of the body. In a broad sense their functions include phagocytosis of exogenous and endogenous particles, analysis and digestion of these particles, and either excretion of the products of digestion or elaboration of new products to meet the needs of the body. They serve in the conservation of iron from effete erythrocytes and in pyrrole metabolism. They probably take part in the intermediary metabolism of lipids. Their synthetic capacities involve processes of immunization; they probably involve elaboration of certain of the lipoproteins necessary to the body; and they may involve elaboration of other biologically active combinations of protein with other constituents. Investigation of these capacities and of the forces that attract to R-E cells substances which may then be destroyed, or from which the cells can elaborate useful new products, should expose entrancing revelations. These should prove to be valuable links to numerous disease processes and to many of the remarkable findings that biochemists are contributing concerning the constituents of tissue extracts.

1. E. H. Tompkins, New Haven, in *Jl. Amer. Med. Women's Assn.*, Nov.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### GASTROINTESTINAL SYMPTOMS FROM HEART DISEASE MEDICATION

WITHERING directed that digitalis be continued till slowing of the pulse, diuresis, or vomiting was produced. All experienced in the care of persons with heart disease know anorexia, nausea, vomiting, purging and abdominal discomfort as results of the disease and of its treatment.

Two New Yorkers<sup>1</sup> discuss this subject in a helpful way.

For a hundred years a dispute has gone on about the best means of giving digitalis. Every twenty years or so opinion goes back to initial full digitalization. The instances in which this is indicated are few, and in all others the risk is great and slow administration seems more beneficial. Doses so small as not to risk causing any ill effect

1. F. M. Groedel & M. Miller, in *Am. Jl. Dig. Dis.*, May.



may prevent cardiac hypertrophy in patients with valvular lesions.

Ill results are especially apt to follow the use of digitoxin; still this digitalis product is at present the favorite with many clinics and individuals practitioners. Digitoxin, "in contrast to other digitalis glucosides, becomes irreversibly fixed and accumulated in the heart muscle."

In many cases vomiting stops when change is made from oral to hypodermic administration of digitalis, although some vomiting from this drug is of central origin.

Strophonthin, being much more quickly eliminated than digitalis, has fewer ill effects when given in proper dosage.

Aminophyllin, intravenously, is extremely useful in many cases, but it is not dissolved in the acid stomach and so can be of no benefit in the majority of cases when given by mouth. It should be given *II'*, very slowly.

Ammonium chloride is useful as a diuretic only when given in conjunction with another drug, and then for only a short time.

*Quinidine* sulfate, given with proper precautions, causes ill effects in only a few instances. The commonest ill effect is diarrhea. A few drops of tincture of opium with each dose, or substitution of *quinine*, is indicated.

Mercurial diuretics should not be given oftener than twice a week, unless electrolyte balance is determined frequently. Those for oral use are effective. Injected deep in the glutei, the effect is about as good as *IV'*.

The only valid reason against strophanthin treatment is that the drug must be given by vein.

Medication in heart diseases by rectum requires more than usual care of the rectum if results are to be satisfactory.

Perhaps the most striking lesson taught here is that the authors of the article reviewed so unhesitatingly express a great preference for strophanthin over digitoxin.

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## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### SUGGESTIONS FOR NEW TRUSTEES

IT IS A GREAT HONOR to be elected trustee of a hospital and it is equally as great a responsibility. When a new hospital is opened the Board of Trustees is usually appointed from those who have shown an active interest in establishing the hospital. This assures a board interested in the success of the enterprise; but it does not assure a board qualified to pilot that institution to success. Many board members do not have time to study these problems, so the employment of a Business Ad-

ministrator constitutes the major work of the trustees—except for raising money. Let no one accept the honor of being a trustee without realizing the time and patience required by the job. After nearly 30 years experience in operating hospitals, I venture to offer a few suggestions.

1. Do not agree to serve as a trustee of your hospital unless you have the time and are willing to spend it *listening* to many complaints from the Business Administrator, the Superintendent of Nurses, the patients, the patients' people and the doctors. Listening will give him a store of knowledge concerning the operation of the institution and the fitness of the personnel that will enable him to discharge the duties of a board member with profit to the hospital and credit to himself. He should abstain at all times from rendering a decision but should never refuse to listen to the complaints of those interested in the hospital and its service.

2. He should visit the hospital frequently and discuss with those in charge various problems that have been brought to him, asking questions but never giving orders. Orders should come from the appointed officer or officers of the board. A trustee should recognize that the other members may have more information on the subject than he, maybe information that will present the matter in a very different light.

3. Every effort should be made to get a Business Administrator who is an executive and who is not afraid to carry out the rules of the board. It is important that the Business Administrator understand that he gets his orders from either the board as a whole or the Executive Committee appointed by the board. Many hospitals have suffered and many administrators have failed because this point was not made clear in the beginning. One domineering board member can create a very difficult situation by giving personal orders to the Administrator. Each member of the board should recognize the fact that for the Administrator to exercise proper authority, he must not be given conflicting orders and this will surely happen if each trustee feels that they can give individual orders to him.

4. No Board of Trustees should consist of more than 12 individuals, and if more than five, it is highly important that the board have an Executive Committee consisting of the President, the Secretary, the Treasurer and a Liaison Officer from the Medical Staff. Some hospital authorities believe that doctors should not be appointed to the Board of Trustees. This should be determined by each individual institution. Some doctors are well qualified by temperament, broad-mindedness, experience and a total lack of professional jealousy. Such doctors make valuable members of the board. At all

times, however, there should be a liaison officer serving between the Medical Staff and the Board of Trustees. In many cases this position rotates and becomes one of the duties of the President of the Staff each year.

5. One of the most delicate problems is that of obtaining coöperation from the Medical Staff. Doctors are individualists, and their training teaches them to be leaders, not followers. Too many doctors think a rule is a good thing for others, but not for them. If the medical schools would add a few lectures on how to become a good staff member, the hospitals appointing these young doctors to membership would greatly benefit. Many doctors on a hospital staff do not realize that teamwork is now their job, rather than individualistic work. They cannot conceive of the inconvenience caused by being late for an appointment in the operating room, for hospital rounds or for doing dressings. The doctor feels that his time is more important than anyone else's on the staff. Whether this is true or not, he does not realize that in many instances he intrudes upon some other staff member's time, and so the thing goes all through the day and up into the night.

6. The trustees should, after careful consideration and expert advice, decide upon a set of rules and regulations for the operation of the hospital, which should include duties of the Business Administrator and all under him, of the visiting medical staff, and rules and regulations for patients and visitors. This set of rules should be agreed upon by the visiting staff. It is not hard to get the staff to agree to the advisability of rules; then after these rules have been passed upon by the Board of Trustees and approved by the visiting staff, the responsibility for the carrying out should be placed squarely upon the Business Administrator's shoulders, and there they should stay. At no time should any member of the staff or the trustees request the Administrator to violate these rules. Only the Board of Trustees should retain that authority, and if the Administrator's hand is not upheld in the enforcement of these rules he will not be of much value to the institution.

In conclusion: All trustees should remember that to be the trustee of a hospital is a great honor which carries a great responsibility. The citizenship of your community has vested in you the responsibility of taking care of their sick. You cannot do this without work, without sympathy, without patience, without long-suffering and without giving a great deal of your time to the job. If you know of anything to prevent you from doing this, be man enough to request that your name not be placed on the Board of Trustees.

## UROLOGY

RAYMOND THOMPSON, M.D., Editor, Charlotte, N. C.

### SOME COMMON MEDICAL UROLOGIC CONDITIONS—DIAGNOSIS AND TREATMENT

It is neither feasible nor desirable that all disease conditions of the genito-urinary organs be treated by a specialist. The vast majority can be well managed—and should be—by their own doctors.

A Louisville urologist<sup>1</sup> writes an article of unusual helpfulness on this theme.

Probably the most common urological condition in general and urologic practice is "pyelitis" with or without cystitis. In "pyelitis" (pyelonephritis) with its unilateral or bilateral back pain and tenderness with or without fever, the urine is loaded with pus and there may be some blood. Often the patient with recurrent pyelitis or cystitis is found finally to have bilateral renal tuberculosis with bladder involvement. The importance of microscopic urine examination on *every patient* is emphasized.

The great bulk of urinary-tract infections are of the gram-negative bacillary type; most commonly *E. coli*. The sulfonamides are very active against the coliform group and they have the advantage that when taken with an alkali they afford alkaline urine soothing to the inflamed mucosae. In case of sulfonamide sensitivity turn to mandelic acid combined with methenamine—"Mandelamine." This has the disadvantage of being effective in a highly acid urine only and thus is not well tolerated by some with severe cystitis. The dosage should be at least 12 tablets daily, continued well after the urine is normal under the microscope. Streptomycin we give only for infections of such severity that its use, due to potential toxicity, can be justified. Aureomycin and Chloromycetin too have been reserved for the more serious cases. These drugs can be used repeatedly without making bacteria resistant to them. Penicillin is valueless in pyelonephritis except in the rare instances of coccal infection.

A mixture of Sulfacetimide and Sulfadiazine is the choice for sulfa medication.

Non-specific prostaticitis is one of the most common and probably the least understood urological conditions. Chronic congestive prostatitis causes low-back pain in the morning, that soon wears off, in contrast to the backache of usual orthopedic disturbance that is intensified as the day wears on. The secretion obtained upon massage shows variable amounts of pus and pus clumps on a methylene blue stained slide. Therapy: Prostatic massage

1. Robt. Lich, Jr., Louisville, in *Jl. Ky. Med. Assn.*, June.

weekly, continued until good spontaneous drainage is accomplished. It may be several months before the gland softens and returns to normal consistency. Hot sitz baths and Serenium or Pyridium relieve posterior urethral discomfort.

Acute obstructive seminal vesiculitis is often confused with acute appendicitis, and following the appendectomy the persistent complaints of intermittent right lower quadrant pain are embarrassing to all concerned. The differential diagnosis is simple and requires only upon a careful history and prostatic examination. Treatment: For pain  $\frac{1}{4}$  grain morph., or 1/16 gr. Dilaudid, some barbital *IM* in addition. The following day gentle massage of the affected vesicle can be started, and if another severe attack is initiated, additional opiate. Gentle daily massage is started as soon as the acute phase is passed. Hot sitz baths are a great aid. Usually patients completely relieved of the acute phase in 24 hours. Vesicle and prostatic massage interval is gradually lengthened, not discontinued until secretion and the vesicles are normal. Regular intercourse in moderation is beneficial in establishing drainage.

In a case presenting signs of acute ureteral obstruction, and no x-ray evidence of nephrolithiasis, prostatic examination may disclose seminal vesiculi as the cause of ureteral spasm and obstruction.

#### BEOWETTING CURED BY MEATOTOMY

A REPRINT from a distinguished guest contributor to a recent program of the Tri-State Medical Association<sup>1</sup> reminds that there are many often-neglected urologic lesions in children. The prevalence of the idea that nothing can be wrong with the urologic tract never contaminated by the gonococcus is deplored. Also "let the child alone and he'll probably outgrow it," can be carried to excess.

We agree that the most commonly neglected urologic condition in children is the narrow urethral meatus, but not with the implication that children with a narrow urethral meatus urgently need examination by a competent urologist." Certainly a child's own doctor can very easily find out whether or not the child's external meatus is too small, and if so slit it.

Of 316 children with various urologic complaints seen in ten years, the major symptom was enuresis in almost one-third. The age range was from 2 years up to 24. Almost every case of enuresis was found to be due to narrow meatus. Occasionally a congenital stricture in the anterior urethra is found to be the cause. In a rare case of enuresis no obstruction has been demonstrable. The obstruction causes a hyperemia of the posterior urethra and lowers the threshold for the voiding reflex. This hyperemia is treated by urethral instrumentations and later by instillations of 1 per cent silver nitrate solution.

Of 98 bedwetters meatotomy was done in 92. Bougies were used in children up to 9 to 10 years old, depending upon the size and development, sounds in older children. Instillations of 1 per cent silver nitrate solution were begun after a few urethral instrumentations. Dilatation was carried to 20 to 22F when possible. Many did not wet their beds after the meatotomy and first urethral instrumentation. All but 3 stopped bedwetting after instrumen-

1. H. P. McDonald, M.D., Atlanta, in *Jour. Med. Assn. of Ga.*, Nov., 1947.

tation had been done a few times. The largest number of instrumentations was 36. Older children who wet their beds have been found to respond equally as well to meatotomy, instrumentations and instillations.

"Pyelitis of childhood" is usually nothing but a urinary infection principally in girls and nearly always due to contamination from the rectum caused by faulty cleansing after bowel movement. A narrow urethral meatus combined with a vaginitis to make these attacks of so-called "pyelitis" recur from time to time. Usually one finds vaginitis and narrow urethral meatus. Meatotomy, urethral instrumentation and local treatment for the vaginitis along with proper stool hygiene have, almost without exception, stopped the recurring attacks of "pyelitis."

This experience in cure of bedwetting is far-and-away the most gratifying that has been reported.

It is urgently recommended to our readers.

#### AUREOMYCIN-GRATEFUL PATIENT-APHTHOUS ULCERS

REAPPEAR

(S. Zelman & R. H. O'Neil, Topeka, in *Jl. Kans. Med. Soc.*, May)

A 30-year-old white man was admitted to the hospital complaining of the discomfort and pain of buccal mucosal ulcerations. These appeared in crops of a few at a time, lasting two weeks each, but lesions had been present continuously for the past nine months, and for four years the patient had not been free of lesions for as much as one month at a time. Aphthous ulcerations of the buccal mucosa were the only physical finding, and routine laboratory studies were within normal limits.

On the fourth hospital day, a new crop of lesions appeared. Five large (five mm.) ulcers and 10 pinhead size ulcers were noted. At this time, a five-day course of aureomycin was instituted, with dosage of 500 mg. every six hours. Within 48 hours, most of the small ulcers had disappeared, and the large ones were diminished considerably in size; all pain and discomfort had disappeared. At the end of five days of aureomycin therapy, all but one ulcer had completely healed, the last one persisting two more days. The patient was enthusiastically grateful.

Five weeks later, according to a communication from the patient, aphthous ulcers reappeared.

#### NEW TREATMENT CURES ACNE AND PREVENTS SCARRING

(C. S. Wright and E. R. Gross, Philadelphia, in *Arch. of Derm. & Syph.*, June)

Small pieces of dry ice applied directly to the acne pustules for from three to five seconds have given good results in 2,000 cases of acne. If the lesions are numerous, a large piece is applied over a group of lesions. Since the lesions are usually elevated, the skin between them is untouched if the right amount of pressure is applied.

Within a few hours there may be surface vesiculation over the pustule, this followed by drying and shrinkage of the treated pustules, and usually will involute from one or two treatments with little or no scarring.

Deep cystic lesions may require a number of treatments.

#### SPONTANEOUS RUPTURE OF THE AORTIC VALVE

(R. W. Phillips et al., Rhode Island Hospital, in *R. I. Med. J.*, Oct.)

If a patient without prior valvular heart disease is found suddenly to have developed marked aortic insufficiency, following trauma to the chest or severe muscular exertion, one should suspect rupture in the aortic valve. Also the finding in any adult of a particularly intense aortic diastolic murmur accompanied with a thrill, in the absence of bacterial endocarditis or lues, should make one consider rupture in the differential diagnosis.

## PRESIDENT'S PAGE

### POLITICS AND MEDICINE

IN OLDER DAYS when the doctor and the preacher were looked to for leadership in every community, there was little need for them to trouble themselves with how the people voted. A great change has taken place in the last one-half century, making it necessary that we, as medical men, change our policies. The organization of medical societies was not begun for political purposes but for the advancement of medical science. The medical profession has been very proud of its scientific achievements. At this very moment, however, a strong attempt to take charge of the medical profession is being made by a group made up of self-seeking politicians, wild-eyed theorists, and members of (so-called) labor unions.

As your president, I strongly urge you to take cognizance of these facts and to govern yourselves accordingly. It is not enough to assert that you are against political medicine. Because of your rugged individualism you have weathered the storm of trial and error and come out triumphant with a system of medical service which is the envy and admiration of the world. Now it becomes your duty and obligation to defend that system of medicine with the same rugged individualism that you manifested in producing it. As individuals you are capable of wielding great influence among your patients and their friends. Among these patients will be found all of the lawmakers of our country. Seek out from them how they stand as to socialized medicine, and what is more important why they think as they do. Once you have gotten this information, you are qualified to meet the arguments put forth by those proposing to force socialized medicine down our throats. It is important that you act as individuals, both from the legal and influential standpoint. You are a citizen of the United States. Democracy was founded on the principle of government by the people, of the people and for the people. If we are not to give up this heritage, then we must continue to require of our leaders recognition and championing of the rights of individuals and families to life, liberty and the pursuit of happiness. And there are few more important elements in a man's happiness than the choice of his own doctor.

R. B. DAVIS.



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*As is true of most Medical Journals, all costs of cuts, must be borne by the author.*

## THE GOLD-HEADED CANE

MANY years ago the local County Medical Society established the custom of presenting each member a gold watch on the attainment of his seventieth birthday. A dozen years ago I prevailed on the Society to change this custom, on the grounds that, while a gold watch is eminently suitable as a gift to one entering the profession, and who most likely has no good watch, it is no suitable gift to one who either has such a watch or cannot tell the time by a watch.

Somehow I had gained the impression that Fothergill had at one time worn the famous Gold Headed Cane. In this I was in error, as shown by the following abstracted sentences,<sup>1</sup> which will enlist the interest of many of the elder brethren and perhaps a few of the moderns.

When the president of the Royal College of Physicians of London delivered the Convocational Oration before the American College of Physicians in Boston on April 19th, on the history of the Royal College, he showed to his audience at an appropriate point in the address an old-fashioned gold-headed cane.

The historic Gold-Headed Cane first appeared upon the medical scene in 1689—the year of Sydenham's death—in the firm grasp of Dr. John Radcliff, of London. Radcliff, somewhat pompous and assured, was physician to William and Mary and to Queen Anne. On his retirement Dr. Radcliff gave the cane to Richard Mead, distinguished as a physician, learned, cultured and kindly. The cane went with him on his visits until his death in 1754, when it passed into the keeping of his former fellow student at Leyden, Anthony Askew, a man of property, a traveler and a scholar. From Askew the cane descended to William Pitcairn, one-time president of the Royal College, brother of Major Pitcairn who fell at Bunker Hill and whose orphaned children William then adopted. David Pitcairn, a nephew, inherited the cane in 1791.

On the death of Pitcairn the younger in 1809, Matthew Baillie, who had dedicated his *Morbid Anatomy* to him, received the cane. Baillie, a nephew of the Hunters, was England's first thorough student of pathology, who, "less brilliant than the Hunters, less famous than Withering or Jenner, nevertheless characterized in his person the ideal of the physician."

Gold-headed canes, however, were no longer part of the doctor's standard equipment in the nineteenth century and this one came consequently more and more to rest in Matthew Baillie's chimney corner. Here it was standing on his death in 1823, when it was presented by his widow to the Royal College of Physicians. Its final sanctuary in the Museum of the College.

1. Editorial in *New England Jt. of Med.*, May 18th.

## EFFECTIVE DIAGNOSIS AND TREATMENT BY DOCTORS IN SMALL COMMUNITIES

IT IS POSSIBLE, says Gilbert,<sup>1</sup> that the general practitioner or a specialist in a smaller community does not need as much in the way of facilities as he thinks he does. He cites with approval a line from one of Horace's odes: "Persian elegance, my lad, I detest," emphasizing his point that one should not attach too much importance to elaborate equipment, but should work and accomplish with the simple means available.

We do not know enough in regard to the long-term effects of many of our new drugs. Observation of such drugs can be made to advantage in a family practice. The eventual effect of many endocrine preparations can be profitably so observed. There is no illness to which all this does not apply.

There is much clinical investigation to be done in your office, if you will take it up as a hobby instead of golf or stamp-collecting.

It is gratifying to have the Professor of Medicine in Northwestern University join me in inveighing against the clamor of the administrations at Washington and at all the State capitals—the ninety-and-nine of the specialists joining enthusiastically in this clamor—that the rural people and those in the small towns are getting poor—often indeed, they say "disgracefully inadequate"—medical service.

Professor Gilbert goes on to state in some detail how the family doctor can and does administer proper therapy, winding up with the sentence: "There is no illness to which all this does not apply."

Over many years I have shown from unimpeachable records records made from year to year by State Boards of Health, every one of which boards was clamoring for "more hospitals, and more adequate medical care for the rural population"—that this rural population, all over the country, is living longer and more happily (as shown by the comparative suicide rates) than is the urban population.

It is pathetic to see the people of county after county burdening themselves with hospitals into which to send their sick at a cost of \$12.00 per day—when not one in four can afford this hospital expense and when 29 out of every 30 would be better off at home in their own beds.

Oxygen, insulin, glucose, plasma, whole blood, antidotes, antivenin, the sulfa drugs, penicillin and all the other antibiotics—all the therapeutic agents which have markedly reduced the death rate can be just as well used in home as in hospital—and with better results, because the home patients do not worry themselves to death over hospital bills they can not afford to pay. Do I hear somebody say "hospital insurance"? Well, as I have said many

times before, the "not for profit" companies confess to an overhead of 20 per cent; so insurance advocates are in effect saying "You can't afford to pay \$80.00, but you can afford to pay \$100." And the greater use of hospital beds because of hospital insurance will make the ratio at least 50 to 100.

## AMPUTATIONS WITH SPECIAL REFERENCE TO PHANTOM LIMB SENSATIONS

AMONG my boyhood friends were a number of Ex-Confederates (they were not *veterans* till past 60, and no one would be so unfeeling as to call them amputees) who had lost an arm or a leg, and I learned from them that one could get something between toes that had been amputated 30 years before.

One of my first Charlotte patients was Dr. Jack Walker, father of our Mayor J. O. Walker. The occasion of my seeing him was a painful neuroma of a leg stump. Dr. Jack and a brother, both Lieutenants, each lost his right leg at Gettysburg. The morning of Dr. Jack's wedding day, he fell and broke his wooden leg, so he was married "in" his brother's wooden leg.

A Scotsman<sup>1</sup> has written informatively on this and kindred subjects.

Stevenson's experience as regards the Symes' amputation is that reamputation at a higher level has become necessary in many cases, owing to pressure complications brought about by the nature of the prosthesis required which is heavy and cumbersome. Were the patient content to use an "elephant boot" he would probably get along well, but the appearance of this deters him from wearing it. The Gritti Stokes amputation has never been popular, perhaps owing to the difficulty in correct performance. Both these operations are still popular in America and Canada and are apparently looked upon as operations of choice where possible.

In many cases of amputation done for senile or other types of gangrene due to endarteritis a tourniquet is quite unnecessary and may indeed cause an arterial thrombosis higher up the limb by fracture of a plaque of atheroma.

We do not now, as the older surgeons used to do, try to cover the ends of the bones by muscle as well as skin, fat and sometimes deep fascia. We endeavour, in the case of the leg, to produce a scar which is posterior, with the soft tissues freely mobile over the end of the bone. The standard artificial leg aims at a "side-bearing" rather than an "end-bearing" stump. In the case of the arm a terminal scar is no disadvantage, even if this is adherent to the bone.

1. N. C. Gilbert, Chicago, in *Miss. Valley Md. J.*, Jan.

1. G. H. Stevenson, in *Edinburgh Med. J.*, Jan.

There is no attempt made to round off the cut end of the bone with a rasp or file. Nature herself is quite capable of doing this in a very short time. The production of bone sawdust by saw or rasp tends to produce spurs of bone, and it is well to protect the stump from sawdust and wash it away with saline solution before closing the wound, also with a view to the prevention of spur formation. It is preferable to cut bone and periosteum practically at the same level, leaving stripping to a minimum. Many functionally perfect stumps will be found to have greater or lesser degrees of spur formation when examined by x-rays.

In below-knee amputations it is essential to cut the tibia obliquely from before backwards and downwards to prevent pressure on the skin from the sharp subcutaneous surface of the bone, the fibula at a higher level than the tibia.

Catgut is used for the larger vessels, frequently passing a running stitch around the larger vessels which takes in a portion of muscular tissue, and the cut end of the vessel is then embedded and buried in muscle rather like the invagination of an appendix stump. This procedure may be of little value but it gives the operator the sense that the large vessel is better protected and has something to pulsate against.

No matter which method is adopted a stump neuroma will form on the cut ends of the larger nerves, because this is the natural response of the nerve to its section. Section by a very sharp knife is one method of choice; but the essayist still prefers crushing the nerve at a point considerably higher than the amputation level and then ligating it like an artery, hoping that the nerve sheath thus closed will act as a limiting membrane.

The neuroma which forms is of no importance unless it becomes a painful neuroma. After excision and section of the nerve at a high level, recurrence is common, and accompanied by more pain than was previously suffered. If the neuroma is diffuse and attached to scar tissue, or even to the bone, excision may bring about relief. Of patients sent by doctors who advise removal of neuromata, Stevenson operates on very few, preferring to use conservative treatment.

The modern artificial limb is made of duralumin; the perspiration of certain individuals, for causes unknown, corrodes the metal and thus produces a rough abrasive surface in a short time. This happens despite the protective paint applied to the metal. In those cases the upper part of the bucket has to be replaced by the older wooden type.

Special dressings which fit the stump accurately are an advantage and, following healing, crepe bandages should be applied to produce a steady pressure which prevents oedema, hastens the

shrinking of the stump. This bandaging should be made a routine and the bandage changed and tightened twice a day.

As soon as possible exercises of the limbs which remain and have to take on a double burden are of as much importance as the care of the stump. General exercise is also required.

A batch of prisoner-of-war amputees, late in the war repatriated from Germany, who had manufactured limbs for themselves of wood, scrap iron, etc., were able to fend remarkably for themselves. It struck me forcibly that the amputee having to do for himself at the very beginning has an important bearing on his outlook on life later.

The great majority of amputees have phantom limb sensation, not always painful. The sensation of still possessing a foot is so vivid that it may lead to the patient trying to stand upon it, and several severe haematomas or even fractures of the stump have resulted.

An amputee who has had an amputation because of a tuberculous knee or severe leg ulceration may retain the sensation of a painful knee or a painful ulcer. Another rather uncommon phenomenon is the "telescoping" sensation in which the hand or foot appears to be just at the end of the stump itself, or perhaps midway between the end of the stump and its normal position.

Many amputees have "the jump" in the amputation stump. When they go to bed at night it may keep them from sleeping. In the more severe form it is called "stump chorea." Many forms of operative treatment have been tried, few have any lasting result.

#### MEDICATION OF COMMON RECTAL CONDITIONS

WE STRICTLY PROHIBIT the use of soap in enemata because of its caustic action on mucous membrane. This sentence which so forcibly supports what I first learned from Dr. E. H. Terrell caused me to go on with this article,<sup>1</sup> for its sound sense proved that what the author said further would be worth reading.

Aqueous mercurochrome, 5 per cent, is useful medication following surgery to the anal outlet. Pruritus ani, so frequently over-treated by irritant medication, is often markedly relieved by staining the site with the aqueous dye.

Silver nitrate—1% and 10%—have earned a useful place. The weaker solution can be safely and painlessly used to stimulate slowly healing wounds; the stronger for the sole purpose of cauterizing overgrowth of granulation tissue.

An indelible pencil is far the easiest means of applying gentian violet in pruritus ani. The cleansed and moistened perianal skin is gently stroked with a pencil point until thoroughly colored. The

1. M. M. Marks, Kansas City, Mo., in *Medical Times*, May.



dye is fungicidal and bacteriostatic and, because of its high alkalinity, must not be used oftener than bi-weekly. It is of particular benefit in cases of secondary invaders such as monilia and cocci.

Suppositories and ointments have limited usefulness. Proctologists have long recognized that the best medicaments for this area have certain attributes, namely—ease of application, effective analgesia, decongestive ability and bacteriostatic action. In the past two years a product has been added to our armamentarium that has these desirable qualities. Rectalgan\* consists of a special oil base combined with benzocaine 4.5%, phenol 1.75%, menthol 0.5% and ephedrine 0.125%. It exerts its bacteriostatic and decongestive properties without interfering with healing. In over 3,000 applications this formula has shown no evidence of local irritation or exciting skin sensitivity.

For the initial examination a cotton applicator dipped into the medication and inserted into the anal orifice after three to five minutes contact makes the anus less spastic and permits easier digital and instrumental examination. Proctoscopic and sigmoidoscopic observations can be done with minimal discomfort because of the added lubricating effect. In the postoperative treatment a similar application lessens the discomfort of dressings. In acute fissures or abrasions of onychial trauma or small marginal thrombi, local applications with bulb syringe or cotton stick bring immediate relief.

Frequent pains in or around the anus while sitting or squatting may be due to crypt infection. The anal glands may be palpably thickened and on observation with the anoscope purulent drainage from the ostia can be seen. Twice daily instillations of this processed oil will abort the abscesses and resultant fistula if treatment is begun early. Softening the stool with milk of magnesia or saline aperients instead of mineral oil is also recommended. Pain and tenesmus are relieved within a few hours.

A great factor in obstipation is the fear of pain on passage of hard stool. Pectenosis, anal fissuring and abrasion by foreign matter tearing the mucocutaneous are chief causative factors. Twice daily injections of Rectalgan followed by gentle massaging with the sheathed index finger is of considerable benefit. Laxative habits could with like treatment have a softened and easier stool without resorting to medication of the entire digestive tract.

In cases of fecal impaction as in the aged or following ingested barium, one or two ounces of this vehicle instilled rectally the patient in the knee-chest position, affords easier manual fragmentation of the mass and expulsion can then be effected after a saline enema.

In pruritus ani with little pathology other than

\*Supplied through courtesy of Mallon Chemical Corporation Division of Doho Chemical Corporation.

an acanthotic lacerated skin, the prohibition of soap and toilet tissue and the application of this medicament afford prompt and lasting results in many cases. Chemical and thermal proctitis caused by soapsuds enemata, glycerine suppositories or excessively hot water responds well to the emollient, decongestive action of this product.

## PROTECTIVE MEASURES IN HEART DISEASE OF MIDDLE LIFE

FALK<sup>1</sup> cites these measures plainly, definitely and with authority.

Aside from the small incidence of chronic cor pulmonale and syphilitic heart disease and bacterial endocarditis, the vast majority of the cardiac cases of mid and later life are due to hypertension and coronary artery disease.

This discussion is of heart disease during and after middle age. The approach to the problem of etiology is divided into predisposing, precipitating, and perpetuating.

Treatment falls into these categories: 1. treatment of acute cardiac emergencies; 2. long-term management of chronic heart disease.

1. In the emergency, one to two grains of papaverine, *II'*, followed by demerol or morphine, also *II'* in severe cases. Oxygen is often life-saving. For shock, saline and glucose *IV*, and even plasma in extreme cases. Following this, papaverine by mouth seems to be superior to theophyllin, and quinidine appears to discourage fatal ventricular fibrillation when extrasystoles are frequent.

Careful nursing and feeding and avoidance of straining at stool are extremely important. Anticoagulant therapy has reduced the mortality of myocardial infarction from 22% to 14% on our hospital service, and is to be used wherever daily prothrombin studies can be relied upon. When this is not possible, thrombo-embolic phenomena can be discouraged by a cautious deep breathing and leg bending exercise routine, beginning on the fourth or fifth day after the attack.

For the congestive heart failure emergency—the prompt use of morphine *II'* followed by aminophyllin and *O II'*; digitalis *IM* in the beginning, then oral, right after the emergency measures and at 48-hour intervals for the first 10 days of recovery, after which the interval is increased. A low-sodium, light general diet with adequate protein intake is in order.

Nitrites, potassium sulphocyanate and veratrum viride have proved useless, even harmful.

2. The only effective therapy for the long control is low-sodium diet, whole-leaf digitalis, mercurial diuretics, aminophyllin in alternating weeks and judicious sedation—alternating to avoid cumulative effects, and above all a strict insistence on the patient living within the bounds of his lowered



cardiac tolerance.

Chronic coronary disease following occlusion with infarction requires adaptation of his plan of living to his limited coronary supply. In order follow a low-fat diet, papaverine by mouth (at least two grains three times a day), kept up for several weeks—being superior to xanthines. Sedation is in order, and moderate alcohol intake useful. Smoking is harmful; choline and methionine questionable, but worth trying. Also the cautious use of thyroid, one grain a day in cases showing high cholesterol levels.

The studied cultivation of serenity is the prime essential.

1. O. P. J. Falk, St. Louis, in *Miss. Val. Med. J.*, Mar.

#### FRACTURES IN CHILDREN—DIFFERENCES FROM FRACTURES IN ADULTS

A DISTINGUISHED ORTHOPEDIST<sup>1</sup> told last year's meeting of a State Medical Society many things not commonly given due appreciation about fractures in children.

The principles of fracture treatment in children are simple. Alignment is the chief requirement; that is, the fracture must not be angulated or rotated. Apposition and length are of little significance in children. Usually an excellent result is obtained by simple traction or closed reduction and a cast. Children are going to grow: growth tends to equalize shortness from over-riding, and will correct minor angular deformities near the bone ends. The third point is adverse. Following injury of the epiphysis, growth may be retarded so as to produce angular deformity or shortening.

Fracture of the femur in children is usually well treated by skin traction, preferably of the Russel type for older children and double overhead for those under five years of age. There is usually over-riding. One cm. of over-lap is the optimum position for healing. Union is more rapid than if the bones are end to end. The shortening will usually be overcome by more rapid growth. Sometimes there is undesirable overgrowth.

At the middle of the bones good alignment is imperative, and is easily obtained by traction. At the ends of the bones it is not so important that the alignment be perfect. There is a tendency for the fractures at the distal end of the radius to angulate in the cast. A second reduction is justifiable if the angulation is in excess of 30°.

Operations are difficult to justify. One tragedy in a lifetime is sufficient to condemn open reduction.

Angular deformity will correct spontaneously with growth in other long bones, particularly true at the proximal end of the humerus. Unfortunately, there is a current belief in some localities that open

1. W. P. Blount, Milwaukee, in *Jl. Iowa Med. Soc.*, May.

reduction is necessary at this location in children. Accurate reduction is not necessary. Epiphyseal fractures at the proximal end of the humerus do just as well even if the reduction is incomplete.

At the elbow accurate reduction is imperative; apposition need not be perfect.

Pain, inability to move the fingers, cyanosis or pallor or swelling are signs of early ischemia. All constricting bandages must be removed, flexion must be released beyond a 90° angle; the arm must be elevated, and satisfactory position of the fragments maintained by traction. If the new position does not relieve the symptoms so that pain disappears, capillary pulse returns and the fingers become movable within one-half hour, energetic measures must be instituted immediately. Procaine block of the appropriate paravertebral ganglia may be performed. If this is not immediately successful, dense investing fascia in the cubital fossa is slit. Ligation and excision of the involved portion of the brachial artery along with its sympathetic fibers will relieve the spasm of the collateral circulation and prevent a catastrophe.

When there is a definite need for operation (usually at the elbow), operation should be performed promptly.

*Save this for use in case a parent, dissatisfied with the result of your treatment of a fracture, has an x-ray picture made which shows overlap, and presents it as prima facie evidence of malpractice.*

#### JUNE STILL THE "MONTH OF BRIDES AND ROSES"—BUT NOT IN ALL STATES

*Bulletin Met. Life Ins. Co., May)*

In the Northeastern and the North Central States the daily number of marriages in June of 1948 was from 60 to 70% greater than the average for the year—45% for the country as a whole.

In Mississippi, South Carolina, Arkansas and Georgia December is the favored month. In the State of Utah, May is the month of choice.

The regions where the marriage curve reaches a pronounced peak in June also show a secondary peak in late summer or early fall. This is particularly the case in New England. Secondary peaks in August or September, but of smaller magnitude, are likewise observed in the Middle Atlantic, the North Central, and the Pacific regions. In most of these States, the peaks are compensated for by an exceptionally low marriage frequency in the winter months.

Among brides who have been previously wed, the daily average June marriages is 23 per cent above the daily average for the year. This is a third of the corresponding figure for the single.

#### AMYOTROPHIC LATERAL SCLEROSIS (*Jl. Nerv. & Mental Disease*, Jan.)

The clinical features of amyotrophic lateral sclerosis consist of a combination of upper and lower motor neuron disease. Hence, the area affected may show atrophy, spastic or flaccid weakness and reflex changes which may be hypoaffective or hyperactive. The diagnosis is based on a history of stiffness, spasticity, weakness and wasting of the muscles, most in the distal portions of the extremities, steadily progressive, though remissions may occur.

## NEWS

### WAR MEMORIAL MEDICAL COLLEGE OF VIRGINIA ALUMNI BUILDING

Built 105 years ago by Dr. Socrates Maupin, a native Virginian, who was one of the organizers of the Medical College of Virginia and its first Professor of Chemistry and Pharmacy, the house was sold to Robert H. Maury, a cousin of Matthew Fontaine Maury.

When Commodore Maury entered the service of the Confederacy he made his home with his cousin.

In the third floor front room Matthews Fontaine made the experiments which resulted in the first under-water bomb. In 1861 the Secretary of the Navy, the Governor of Virginia and others witnessed the successful explosion at Rocketts on the James River.

The house has been purchased to perpetuate a memorial to those of the Medical College of Virginia who, in all wars since its organization, died in defense of home and country.

Contributions to the cause of paying the remainder of the purchase price, restoration, and maintenance, addressed to the Alumni Association, Medical College of Virginia, Richmond, will be very welcome.

### DUKE UNIVERSITY MEDICAL SCHOOL

A month's course in Medical Mycology, under the direction of Dr. Norman F. Conant, is to be offered at Duke University School of Medicine and Duke Hospital July 3rd-July 29th. Classes will be held every day in the week, except Sunday. The objective is to impart a working knowledge of the human pathogenic fungi. Emphasis will be placed on the practical aspects of the laboratory as an aid in helping establish a diagnosis of fungus infection. As patients become available, methods of collecting materials in the clinic for study and culture will be taught.

The number of applicants for the course will be limited and the applications will be considered in the order in which they are received. An attempt will be made, however, to select students on the basis of their previous training and their stated need for this type of work.

A fee of \$50 will be charged for this course, upon the completion of which a suitable certificate will be awarded. Inquiries are to be directed to Dr. Norman F. Conant, Professor of Mycology, Duke University School of Medicine, Durham, N. C.

### TWO DOCTOR GROUPS ENTERTAIN

Drs. J. R. Ashe, R. A. Moore and J. B. Hall; and Drs. Oren Moore and Ledyard De Camp held open house in their new office suites, at 1505 Elizabeth Avenue, Charlotte, N. C., Friday, June 9th, from five until seven.

THE CARTERET COUNTY MEDICAL SOCIETY held its regular monthly meeting April 11th at the Morehead City Hospital—a supper meeting, the hospital as host. The guest speaker, Dr. H. S. Willis, Superintendent of the State Sanatoria, introduced by Dr. K. P. B. Bonner, stated that the waiting list for the three sanatoria is more than 150 patients and that many patients die before they can be admitted. The three sanatoria have a total of 1,100 beds; the building program, which should be completed within 12 to 15 months, brings the total beds up to 1,940. This will mean that instead of a patient waiting from two to five months for admission, if the doctor diagnosed a case in the morning the patient should be admitted that afternoon.

Dr. Willis talked chiefly on vaccination against tuberculosis and the treatment of certain types of cases with streptomycin and other types with surgery. He called attention to the fact that though the tuberculosis death rate in the general population has been remarkably reduced in the past 30 years, tuberculosis is still the chief cause of death in the age group 20 to 25 years.

Dr. S. W. Thompson, Morehead City, president of the Second District Medical Society, which will hold its semi-annual meeting in Morehead City next month, reported progress in the preparations being made for the entertainment of the society.

Dr. S. W. Hatcher, president, presided.

N. T. Ennett, M.D., Cor. Secy.

### SOUTH CAROLINA ACADEMY OF GENERAL PRACTITIONERS

An enthusiastic business meeting of the South Carolina Academy of General Practitioners, preceded by a meeting of the county delegates, was held at Ocean Forest Hotel May 16th.

In addition to other new business the following officers were elected:

President: Dr. R. L. Crawford, Lancaster.

Vice-Pres.: Dr. D. O. Winter, Sumter.

Sec.-Treas.: Dr. H. W. Mead, Columbia.

One member of the Board of Directors to serve for three years: Dr. Charles N. Wyatt, Greenville.

The next meeting of the Academy, the Annual Scientific Assembly, is to be held in Columbia in October.

### DIED

Dr. Washington Budd Sager, 69, a medical practitioner at Danville, Va., for the past 33 years, died June 10th at Danville Memorial Hospital. A native of Shenandoah County, he attended Medical College of Virginia, later graduating at Jefferson Medical College, Philadelphia, in 1908.

Dr. Sager was a past president of the Danville-Pittsylvania Medical Society and was a member of First Presbyterian Church. Among the survivors is a son.

Dr. Hugh M. Beam, a graduate of the College of Physicians and Surgeons, Columbia University's class of 1918, died at a Durham hospital June 9th. Dr. Beam, a native of Louisburg, N. C., had spent all his years of practice at Roxboro and in Person County. He was a member of and had held offices in his County and State medical societies and in the Tri-State Medical Association.

### HYPNOSIS IN TREATMENT

(A. P. Magonet, in *British Med. J.*, Oct. 1st)

A year ago a girl was seen with a cardiospasm that she had had four years. The history revealed that it dated from the day her mother died. Under hypnosis she was told that she could not swallow the fact that her mother died—that the mere thought of it stuck in her throat. It was through her intellectual faculties that understanding came and through the hypnotic power of suggestion that she was able to swallow.

NAUSEA AND VOMITING OF PREGNANCY may be stopped by a 25-mg. dose of vitamin B<sub>6</sub> injected intramuscularly with 0.5 c.c. of extract of suprarenal cortex. Always repeat the injection 24 hours later, whether the first dose is effective or not, and again if nausea returns. When no other complication is present, five doses usually suffice. In a group of 62 patients, symptoms were banished in 56, much reduced in two, and unaffected in only three. Results were equivocal in the other case.

—C. W. Dorsey, M.D., Roanoke, Va., in *Am. J. Obs. & Gynec.*

## BOOKS

**TEXTBOOK OF ENDOCRINOLOGY**, edited by ROBERT H. WILLIAMS, M.D., Executive Officer and Professor of Medicine, University of Washington Medical School, Seattle. With the collaboration of PETER H. FORSHAM, HARRY B. FRIEDGOOD, JOHN EAGER HOWARD, EDWIN J. KEPLER, WILLIAM LOCKE, L. HARRY NEWBURGH, EDWARD C. REIFENSTEIN, JR., WILLIAM W. SCOTT, GEORGE VAN S. SMITH, GEORGE W. THORN, LAWSON WILKINS. 793 pages with 168 figures. *W. B. Saunders Company*, W. Washington Sq., Philadelphia and London. 1950. \$10.00.

Although it is probable that less is now expected by the medical profession from diagnosis and treatment of diseases of the endocrine glands, and from treatment with endocrine products of pathological conditions in other organs and parts, interest in and agreement on the importance of such subjects are still tremendous. The progress made in this field in the last decade has been rather in consolidating the knowledge gained in the previous two decades, and the winnowing of the chaff from the wheat.

First general principles are discussed. Then the different glands of internal secretion are treated of individually. The chapter on the neuroendocrine and psychodynamic aspects of the endocrinopathies, that on obesity, and that on laboratory diagnostic and assay procedures enlist special interest.

It may well be doubted that anywhere is to be found so clear and reliable a courage of this subject of such vast importance to every practitioner of medicine and/or surgery.

**DELAYED UNION IN FRACTURES OF THE LONG BONE**, by KENNETH W. STARR, O.B.E., E.D., M.B., B.S. (Syd.). M.S. (Melb.), F.R.C.S. (Eng.), F.A.C.S., F.R.A.C.S., Surgeon. Sydney Hospital, New South Wales; Consulting Plastic Surgeon, Faculty of Dentistry, Univ. of Sydney, etc. Butterworth & Co., Publishers, Ltd., London, England. *The C. V. Mosby Co.*, 3207 Washington Blvd., St. Louis 3. 1947. \$9.00.

Part one contains sections on the structure of bone, the chemistry of bone, the cycle of bone reconstruction, and the relation between structure and function in bone morphology.

Part two deals with the anatomical structures involved in repair and the process of repair following fractures.

On the foundation laid by the consideration of the subjects making up parts one and two, there is built up in part three a remarkably fine discussion of the causes of delayed union, the particular diagnosis in the individual case, and the management under various conditions, local and general.

This is a remarkable book, dealing with one of the most important of surgical problems in a manner that is at once scholarly and practical. It was awarded the Jacksonian prize of the Royal Col-

lege of Surgeons of England. After sketching it one has no difficulty in arriving at a very high estimate of the judgment of the judges.

**A PRIMER FOR DIABETIC PATIENTS**—An Outline of Treatment for Diabetes with Diet and Insulin including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions, by RUSSELL M. WILDER, M.D., Ph.D., F.A.C.P., Professor and Chief of the Department of Medicine of the Mayo Foundation, University of Minnesota. New, 9th Edition. 200 pages with 8 figures. *W. B. Saunders Company*, W. Washington Sq., Philadelphia and London. 1950. \$2.25.

The author has been for a great number of years distinguished as a world authority on diabetes in all its phases, and for a rare ability to convey his knowledge to others. This edition of his book of instruction for diabetic patients maintains his high standard.

**SEX WITHOUT FEAR**, by S. A. LEWIN, M.D., and JOHN GILMORE, Ph.D. Foreword by SARAH K. GREENBERG, M.D. *Lear Publishers, Inc.*, 105 East 15th Street, New York, 3, N. Y. 1950. \$3.00.

Chapter subjects are: the female and the male reproductive systems, the endocrine glands, the art of intercourse, sex desire and frigidity, pregnancy, sterility, the menopause and the male climacteric, aphrodisiacs, contraception, abortion and venereal diseases.

Necessarily all the subjects must be given skimpy consideration in a little book of 120 pages.

This reviewer pronounces both false and nasty the definition of courtship as "a building of desire and passion to the point of readiness for the final act of intercourse."

### *Write the Author Requesting a Reprint*

"A New Barbiturate for Intravenous Anesthesia," in *Journal Indiana Med. Assn.* (June). Author—Dr. V. K. Stoelting et al., Indiana University School of Medicine, Indianapolis.

"Painless Proctology," in *Arizona Medicine* (May). Author—Dr. Joseph Franklin Montague, 104 East 40th St., New York City.

"Stilbestrol with B Complex for Dysmenorrhea," in *Arizona Medicine* (May). Author—Dr. K. J. Karnaky, Jefferson Davis Hospital, Houston, Texas.

"Oxygen in Cardiac Infarction," in *Bulletin N. Y. Academy of Medicine* (June). Author—Dr. Robert Louis Levy, Presbyterian Hospital, New York City.

"Oxygen for Premature Infants," in *Bulletin N. Y. Academy of Medicine* (June). Author—Dr. Clement A. Smith, Boston Lying-In Hospital, Boston, Mass.

Congressmen wouldn't have so darn many political fences to mend when they get back home, if they hadn't done so much straddling.

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JAMES M. NORTHINGTON, M.D., Editor

VOL. CXII

JULY, 1950

No. 7

## Present Day Concepts of Antibiotic Therapy

WILLIAM H. HARRIS, JR., M.D., Richmond, Virginia

McGuire Clinic. St. Luke's Hospital

**T**HE scope of antibiotic therapy continues to broaden rapidly. There was a time when we were concerned only with the use of penicillin. Then came streptomycin, and during the past year aureomycin and chloromycetin have become available. New substances, some promising, loom on the horizon, and before long they, too, may take their place alongside those mentioned. Whereas molds and various soil organisms have yielded our present supply of antibiotics, insects may be next to augment the ever-enlarging armamentarium. Streptocin and neomycin from the genus *Streptomyces*, lupulon derived from hops, and other antibacterial substances from the blood of the milkweed bug, grasshoppers and the feces of blowfly maggots are in various stages of investigation. Perhaps, as Reimann so aptly puts it, "one may almost predict the rise of a new specialist, the antibioticist, who would determine which antibiotics to use for what disease and how." But for the moment let us consider briefly those antibiotics that are being used daily by each of us in clinical practice.

The antibiotic treatment of urinary tract infections—acute, subacute, chronic, complicated, etc.—is a treatise in itself, and will not be discussed. Likewise, specific details as to treatment schedules for the several forms of syphilis will not be mentioned as they are readily available in the reports

of the U. S. Public Health Service and elsewhere. The ever-changing regimens in the battle with pulmonary and extrapulmonary lesions of tuberculosis, and the antibiotic indications in the surgical sphere are considered outside the scope of this paper.

Indications for the use of penicillin and streptomycin are familiar to each of you. During 1949 much information was published concerning aureomycin and chloromycetin. Certain infectious processes have yielded dramatically to the administration of these newer antibiotics. Still others would appear to be favorably influenced, but more time and broader experience are necessary before a final opinion can be formulated.

I should like to present a brief resumé of the types of infections which we know to be most effectively controlled by each of these four antibiotics. In certain instances you will note that a combination of agents is considered the treatment of choice. Mention is also made, where indicated, of the apparently equal effectiveness of more than one antibiotic agent. Methods of administration, time-dose relationships, and toxic manifestations will also be reviewed.

TABLE 1

### *Infections in Which Penicillin is First Choice:*

Beta hemolytic streptococcal  
Alpha hemolytic streptococcal (strep. viridans)  
Pneumococcal  
Meningococcal (sulfadiazine alone or combined)  
Gonococcal  
Staphylococcal

- (In severe form combine with aureomycin)
- (If resistant—streptomycin and aureomycin)
- Bacterial endocarditis due to:
  - Alpha hemolytic streptococcus (strep. viridans)
  - Streptococcus fecalis group D (combine with streptomycin and aureomycin)
  - Staphylococcus (combine with aureomycin)
- Anthrax (combine with sulfadiazine)
- Gas gangrene (combine with sulfadiazine)
- Spirochetal (Weil's disease and syphilis)
- Actinomycosis (combine with sulfadiazine)

*Penicillin:* (1, 2, 3, 4, 5, 6, 7)

It is not my intent to discuss with you the conventional dosage schedules for the systemic administration of penicillin in aqueous solution or combined with a prolonging agent in oil or water. Each of you is familiar with the use of these preparations. Many of you have occasion to employ one or the other types daily in your practice and are thoroughly cognizant of the excellent results obtained in susceptible infections. Likewise the oral route and the various methods of topical application including dusts for inhalation, troches, ointments and creams, intrathecal, intrapleural, intra-articular, and intrabronchial instillation of solutions are widely utilized in clinical practice and need only be mentioned in passing. In severe and overwhelming infections it is common to administer large quantities of penicillin either by constant intravenous drip or by intermittent intramuscular injection at frequent intervals to insure a favorable outcome.

Current trends are developing in penicillin therapy which claim our attention. Despite the widespread use of penicillin it is extremely difficult to determine the minimum effective dose for each infection. The drug is relatively cheap, toxic reactions are few, and we tend to give more than is probably necessary. At present there seems to be a trend to lengthen the interval between injections and at the same time to increase the individual doses. There is reason to believe that an effective level of penicillin in the blood need not be continuous over a 24-hour period to produce recovery. However, the minimum effective concentration must be maintained sufficiently long either for the destruction of the causative organisms or to prevent their entrance upon an active growing phase. Chester Keefer has summarized the current conception of penicillin time-dose relationships in the following paragraph, and I quote:

"There are two points of view concerning time-dose schedules of penicillin: (1) intermittent treatment, so spaced that there are periods of effective plasma concentration separated by penicillin-free intervals; (2) intermittent or continuous injection of penicillin that will maintain an effective bactericidal plasma concentration for a period sufficient to inhibit completely the growth of organisms, plus the time required for the organisms to recover from

the drug and effectively resume multiplication. In other words, one point of view is that penicillin should be present in the blood continuously, or at least for prolonged periods of time, and the other view is that penicillin needs be present in the blood only intermittently. The difficulty in deciding how often and how much penicillin should be given resolves itself into determining what an effective plasma concentration should be and how long a period may elapse between injections before bacteria will begin to grow once again and cause relapse. Only experience and experiments with various infections can provide the answers for all infections."

As a result of recent investigation the term "discontinuous therapy" has been suggested. Two examples of this method include the work of Weinstein in Keefer's clinic and the report of Tompsett and his coworkers. Weinstein has treated children with hemolytic streptococcal infections on a schedule of 100,000 units aqueous penicillin every eight hours, and though penicillin was detectable in the blood for only two hours after each injection (a total of six hours in each 24-hour period) the results were as good as when continuous levels were maintained. Pneumococcus lobar pneumonia has been treated successfully with aqueous penicillin intramuscularly in 100,000-unit doses at eight- or 12-hour intervals, in 200,000 to 300,000-unit doses twice daily, and in 300,000-unit doses once daily. Keefer states that 200,000- to 300,000-unit doses twice daily will cure 95 per cent of cases. Tompsett and his colleagues employing the principles of discontinuous therapy have made a study of the effectiveness of one or two daily 300,000-unit doses of penicillin in aqueous solutions in the treatment of 125 patients with various acute infections including 44 with pneumococcal pneumonia. Their plan consisted of two doses, 12 hours apart the first day, the third dose being given 12 hours after the second, and from that time to cessation of treatment the patient received only one daily dose of 300,000 units. Penicillin was detectable in the serum after a single dose, on the average for five hours. This regimen provided satisfactory results in the great majority of penicillin-susceptible infections. It is obvious that such a schedule would be insufficient to control serious staphylococcal infections, bacterial endocarditis, and meningitis, which require large quantities of penicillin. These authors cite two possible hazards from this method, the one being that, theoretically, discontinuous penicillin therapy might not be the equal of intensive continuous therapy in preventing non-suppurative complications of Group A hemolytic streptococcal infections, such as acute nephritis and rheumatic fever; the other being the possibility that suppurative complications may occur more frequently with discontinuous therapy. Neverthe-



less, it would appear that highly effective penicillin treatment can be provided by this method without rigid adherence to conventional time-dose schedules which are based on the assumption that continuous plasma levels are necessary.

Oral therapy has been utilized successfully in a wide variety of infections in amounts three to five times the parenteral dose when given at two- to three-hour intervals. The use of an aluminum preparation containing sodium benzoate manufactured by Hynson, Westcott, and Dunning has been effective in a large series of cases including 79 patients with pneumococcal pneumonia in which it was used by Friedman and Terry. These authors recommend 100,000 units every four hours around the clock without regard to the ingestion of food. They believe that oral aluminum penicillin is as effective as aqueous parenteral preparations when about twice as many units are used. Volini and his group gave 200,000 units as an initial dose, followed by 100,000 units every three hours by mouth to 43 patients with pneumococcal pneumonia for an average total dose of 4,400,000 units over a period averaging 5.8 days. The mortality rate was 6.3 per cent, which I think is a little higher than it should be. (Mortality rates in penicillin-treated pneumococcal pneumonia vary from 3 per cent to 5 per cent according to Keefer.) Weinstein's results in children with hemolytic streptococcal infections were equally as good when 300,000 units of penicillin were given by mouth every eight hours as when used parenterally in 100,000-unit amounts. There was detectable penicillin in the blood stream for six hours after each dose. Despite these apparent clinical successes I am still unwilling to substitute the oral for the tried and true parenteral route except in mild penicillin-susceptible conditions. The development of suppurative or non-suppurative complications ensues often enough even on adequate parenteral regimens to make one wonder if such occurrence might not be more frequent with the more extensive use of oral medication.

Oral and parenteral sulfadiazine continues to be the drug of choice in treating meningococcus meningitis. When sulfadiazine fails to control the process after 48 hours of adequate dosage (and this rarely happens) penicillin should be added. Keefer still feels that penicillin intrathecally as well as intramuscularly gives the best results and advocates this method in pneumococcal, hemolytic streptococcal, and staphylococcal meningitis in combination with sulfadiazine by mouth. The reason for injecting penicillin into the spinal canal, of course, has been the prevailing opinion that very little diffuses into the spinal fluid even in meningitis and when large amounts are given parenterally. Recently Dowling at George Washington University and Spink at the University of Minnesota, working

independently, have obtained therapeutic levels of penicillin in the spinal fluid following large doses intramuscularly (1,000,000 units every two hours—Dowling) and intravenously (1,000,000 units in 5 c.c. of distilled water—Spink). Dowling recommends 1,000,000 units of aqueous penicillin intramuscularly every two hours as the treatment of choice in pneumococcal meningitis, a single initial intrathecal injection being given only to those patients in coma or *in extremis*. Sulfonamide compounds are not considered to be necessary. He quotes a mortality rate of 36 per cent in 22 patients treated by this method as compared with 62 per cent in 66 patients treated in the conventional manner with smaller parenteral dosage and repeated intraspinal injections. Dowling is of the opinion that the same regimen will be equally as successful in the therapy of staphylococcal, Beta streptococcal, and meningococcal meningitides. Our personal experience in two cases of type-specific pneumococcal meningitis treated in the past few months according to Dowling's recommendation has been gratifying. Both patients recovered uneventfully. Reimann insists that intrathecal antibiotic therapy is unnecessary. Wilson and his co-workers in discussing the dangers of intrathecal medication consider the intraspinal injection of various agents including penicillin to be "truly meddlesome mischief and strictly contraindicated."

A few remarks concerning the use of penicillin in bacterial endocarditis: In the acute cases due to the pneumococcus, staphylococcus, and hemolytic streptococcus there has been a favorable response in 40 per cent to 70 per cent; in the subacute type, due to *Streptococcus viridans* in most instances, a fatality rate of 95 per cent has been reduced to about 30 per cent. Five hundred thousand units daily is the minimum dosage, given in divided amounts at four- to six-hour intervals. In the subacute cases therapy should be continued for six to eight weeks. Some cases require a larger total daily amount, and others massive dosage. It is extremely important to do *in vitro* sensitivity tests on the responsible organism in every patient with bacterial endocarditis. In general, the minimum effective plasma and tissue concentration should be somewhere between two and ten times the amount of penicillin which will kill the organism in the test tube. In this way only can a rough estimate of the required daily dosage be determined for the individual patient. When there is relapse it usually occurs within two to eight weeks after cessation of treatment.

Comparatively speaking, penicillin is non-toxic. The two main types of reaction are sensitivity involving the skin and mucous membranes, and neurologic as a result of intrathecal injection. Parenteral therapy causes untoward manifestations in

1.5 per cent to 5 per cent of patients characterized by fever, skin eruptions of various types, edema of the skin, and arthralgia. Typical serum sickness may be produced. Death is rare but has been reported. If more than mild and not controlled by antihistaminics, penicillin should be discontinued. Penicillin in oil and wax was responsible for more trouble than aqueous preparations and, we believe, procaine preparations. Local application to skin and mucous membranes in the form of ointments, troches, dusts, and aerosol solution causes sensitization more often than systemic administration. Consequently the use of ointments, dusting powders, creams, and pastes should be avoided. Indiscriminate inhalation of penicillin dust and aerosols is to be discouraged. Severe reactions in the oral cavity, larynx, and tracheo-bronchial tree with marked erythema and edema, edema of the glottis, and asthma may be produced. The use of dusts for every minor respiratory infection in the variety of inhaling gadgets now on the market cannot be too strongly condemned. The same may be said for the use of troches or lozenges for every mild irritation or inflammation of the buccal cavity and throat.

When intrathecal therapy is necessary the dose should never exceed 20,000 units diluted in 10 c.c. of saline injected once in 24 hours. Peripheral neuritis may appear, but more serious arachnoiditis and myeloradiculitis are not very rare. Penicillin is a definite irritant when applied to central nervous system tissue as demonstrated by convulsions in animals and humans as well as the production of meningeal irritation when large amounts are injected into the cerebrospinal fluid.

TABLE 2

*Infections in Which Streptomycin is First Choice:*

Tuberculosis
Chancroid (aureomycin apparently as effective)
Friedlander's bacillus infections
Bacterial endocarditis due to gram-negative bacilli (combine with aureomycin or chloromycetin)
Tularemia (aureomycin apparently as effective)
Bacteremias due to large variety of gram-negative organisms:
<i>Proteus vulgaris</i>
<i>B. pyocyaneus</i>
<i>Aerobacter aerogenes</i>
<i>Escherichia coli</i>
Friedlander's
Influenza bacillus (combine with aureomycin)
Salmonella (combine with chloromycetin)
Granuloma inguinale (aureomycin apparently as effective)

*Streptomycin:* (1, 2, 5, 8, 9, 10)

The various routes by which streptomycin is administered are well established. Local application has included intraspinal, intraperitoneal, and intrapleural injections; instillation of solutions into the eye, sinuses, external auditory canal; application to skin surfaces in ointments and wet soaks; in-

halation into the bronchial tree *via* aerosolization; and introduction into the urinary bladder and kidney pelvis. The oral route is valueless for systemic effect since so little is absorbed from the gastrointestinal tract. Though streptomycin can be given subcutaneously, it is painful and irritating. Thus for all systemic infections intramuscular administration is advised. It is unnecessary to inject streptomycin intravenously since there is rapid absorption from the muscles. Maximum plasma concentrations are obtained in one to three hours after single intramuscular injections which decrease gradually over a 10- to 12-hour period. An additive effect can be produced by repeated injections every four hours. The total daily dose varies from one to three grams, depending upon the type and severity of the infection. More than three grams daily is rarely necessary. Such large doses if utilized for more than a few days commonly cause toxic manifestations. The usual plan is to divide the total daily amount into two or four equal parts administered at 12- or six-hour intervals.

The tissue concentration of streptomycin is considerably lower than that in the blood, and most of it is excreted in the urine where at least 60 per cent to 80 per cent of the antibiotic can be recovered during the 24-hour period following intramuscular injection. After intrathecal injection streptomycin leaves the subarachnoid space slowly and high concentrations remain for 24 hours after small doses. When this route is used 25 mgm. to 50 mgm. daily is usually sufficient. One hundred mgm. should never be exceeded.

For aerosolization in bronchopulmonary infections due to gram-negative bacilli, 500 mgm. in a concentration of 50 mgm. per c.c. may be inhaled in divided doses over a 24-hour period.

Dihydrostreptomycin, prepared by the catalytic hydrogenation of streptomycin is less neurotoxic than the parent product, and is also tolerated well by patients hypersensitive to streptomycin. It has been estimated that it is less than half as toxic and of approximately equal effectiveness. The dosage schedule is the same. Organisms rapidly become resistant to it as in the case of streptomycin. Its chief value should be in patients unable to tolerate streptomycin and in those requiring large doses or prolonged treatment. Streptomycin-resistant bacteria are likewise unaffected by the dihydro derivative.

The rapid development of bacterial resistance during the course of streptomycin therapy is well authenticated. This feature makes imperative the employment of maximum dosage at the start of treatment. The appearance of resistant organisms probably explains numerous streptomycin failures. Certain clinical observations indicate that para-aminosalicylic acid administered concurrently to

patients with tuberculous infections tends to inhibit or significantly delay the development of bacterial resistance. This drug is now being widely used as an adjunct to streptomycin in the management of some types of tuberculosis.

The two important toxic reactions to streptomycin are: (1) hypersensitive, characterized by skin eruptions with or without fever and eosinophilia; and (2) neurologic, characterized by vestibular dysfunction, deafness, or tinnitus. The former occurs in about 5 per cent of patients. Eruptions may be erythematous, urticarial, maculopapular or purpuric. Their appearance is usually between the third and tenth day of treatment, sometimes as early as the second, and at others not until cessation of therapy. The duration is variable, disappearing in one to three days despite continuation of the drug, or lasting for one week to ten days after it is stopped. There may or may not be fever, although fever alone is rare. The antihistaminics may afford relief from the local discomfort. Vestibular dysfunction in the form of vertigo and ataxia may be of varying degrees of severity, but appears in practically 100 per cent of patients receiving two gms. or more daily for three weeks or longer. Usual appearance time is between the 17th and 25th days. It is much less frequent when doses of 0.5 to one gm. are given over relatively short periods. The duration is variable, lasting from a few days in mild cases to one to two months in the more severe. In some instances symptoms persist for six to nine months. Deafness is uncommon, though reported in a small percentage. It is usually caused by the use of huge doses (6 to 9 gms. daily), by marked renal impairment, or by intraspinal injections for meningitis. It may be transitory, or permanent, and result in complete loss of hearing or only in reduction of auditory acuity. Tinnitus occurs in about 5 per cent of cases. It may be associated with deafness or vertigo, is usually not serious and disappears when treatment is stopped.

TABLE 3

*Infections in Which Aureomycin is First Choice:*

Streptococcus fecalis (group D)  
Acute brucellosis  
Pertussis (favorable reports)  
Tularemia (streptomycin equally as effective. In severe pulmonary form combine aureomycin and streptomycin)  
Influenzal meningitis (in severe form combine streptomycin, aureomycin and sulfadiazine)  
Bacterial infections due to organisms resistant to penicillin, streptomycin, or sulfonamides  
Bacterial endocarditis (see above)  
Chancroid  
All rickettsial diseases  
Granuloma inguinale  
Amebiasis  
Lymphopathia venereum  
Virus pneumonia  
Psittacosis

Infectious mononucleosis (?)  
Chickenpox (?)  
Herpes zoster (?)

*Aureomycin:* (5, 11, 12, 14, 16)

Aureomycin is an orally effective antibiotic which was obtained from a soil actinomycete, *Streptomyces aureofaciens*, by a botanist, Benjamin M. Duggar. Investigations have indicated that aureomycin is active against a wide variety of infectious agents. In fact, its activity encompasses a broader clinical spectrum than penicillin, streptomycin, or the sulfonamide compounds. Apparently organisms, naturally resistant, do not form aureomycin-inhibiting substances similar to penicillinase. The drug is present in the blood and urine in therapeutically effective amounts after oral administration. It also diffuses into the pleural cavity, bile, spinal fluid, passes through the placenta and into the fetal circulation. Intramuscular injection produces pain and irritation at the injection site. A parenteral preparation for intravenous use is available in vials containing 100 mgm. of aureomycin powder. A separate vial containing 10 c.c. of leucine is used as the diluent.

In the adult of average size, mild to moderately severe infections usually respond to a total daily dosage of 2 to 4 gms. Only in severely ill patients with more resistant etiologic agents will 6 gms. or more be necessary. Oral time-dose schedules vary from 0.5 to 1 gm. given at six-hour intervals. When administered intravenously, 350 mgm. every eight hours is recommended. With improvement and fall in temperature the dose can be reduced by half and continued thus until all evidence of infection has subsided. Initial large priming doses are probably unnecessary unless prompt high blood levels seem imperative because of the type and severity of the infection. Perrin Long advocates initial priming doses in moderate and severe types of illness. Combined oral and intravenous therapy should be employed only in the most severe infections.

TABLE 4

*Infections in Which Chloromycetin is First Choice:*

Typhoid fever Acute brucellosis Rickettsial diseases Virus pneumonia	} Apparently as effective as aureomycin
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*Chloromycetin:* (5, 6, 13, 15, 16)

Chloromycetin is similar to aureomycin in its therapeutic effects, but its range of clinical exhibition is narrower. This antibiotic also is absorbed from the gastro-intestinal tract. Woodward and Smadel have each summarized the clinical results to date in papers appearing in the *Annals of Internal Medicine* for July, 1949, and the *J. A. M. A.* of February 4th, 1950. The disease which has here-



tofore defined all chemotherapeutic agents, typhoid fever, is responding most dramatically to chloromycetin. There is no change in the course of typhoid during the first two days of treatment but by the third and fourth days the temperature and toxic manifestations have receded. In general, prompt recovery ensues. There is evidence that intestinal lesions do not heal rapidly even though the temperature is normal, so the danger of hemorrhage or perforation still exists in the early stages of convalescence. Relapses have occurred ten days to two weeks after chloromycetin has rendered the patient afebrile. Prompt control was attained by re-treatment. Smadel believes that the number of cases which relapse will be reduced by administering the drug for 10 to 14 days after the temperature has become normal. This investigator recommends a minimum total dose of 30 gms. given over a 10- to 12-day period. Therapy is initiated by a priming dose of 3 gms., followed by 3 gms. daily in divided doses until disappearance of fever, when

the amount is reduced to 2 gms. daily and continued for seven to ten days longer. Woodward treated four known typhoid carriers of long duration over a 15-day period administering an average total dose of 71 gms. Cultures of bile and stool continued to be positive.

Other diseases which have been favorably influenced are acute brucellosis and infections caused by the rickettsial group. Results in a small number of cases of virus pneumonia, relapsing fever, pertussis, some bacillary dysenteries, and venereal lymphogranuloma have been encouraging. Experimentally, chloromycetin has been a failure in the *Salmonella* group.

The synthetic form known as chloramphenicol apparently is equally as effective as the substance derived from the natural source. It is highly significant that chloramphenicol is the first antibiotic to be synthesized on a large scale for general clinical usage.

TABLE 5  
*Dosage Schedules of Aureomycin and Chloromycetin for Adults\**  
Severity of Illness

	Moderate	Severe	Severe
Aureomycin			
Initial priming dose in mg.	Oral 750	Oral 1000	Intravenous 350
Total daily maintenance dose in mg.	Oral 2000	Oral 4000	Intravenous 1050
Chloromycetin			
Initial priming dose in mg.	Oral 4000	Oral 4000	
Total daily maintenance dose in mg.	Oral 2000-4000	Oral 4000-8000	

\*Aureomycin:

The oral priming dose should be split into 3 or 4 parts and given at hourly intervals for 3 or 4 doses.

The oral maintenance dose should be split into 4 parts and a part given every 6 hours.

The intravenous priming dose should be given in one dose.

The intravenous maintenance dose should be split into 3 parts and a part given every 8 hours.

Chloromycetin:

The oral priming dose should be split into 4 parts and given at hourly intervals for 4 doses.

The oral maintenance dose should be split into 4 parts and a part given every 6 hours.

with the absorption of aureomycin and it is now considered best to abandon its use. Intravenous aureomycin is not productive of nausea. Chemical phlebitis of mild degree has been produced by intravenous injections. Large oral doses cause looseness of the bowels with frequent and bulky stools. True diarrhea is unusual. Cottage cheese has been used with good effect by one investigator in minimizing the local irritant action on the gastro-intestinal tract. These side reactions have not been encountered after chloromycetin or chloramphenicol.

H. J. Harris of New York has reported lesions in the oral cavity, vaginitis, and the appearance of vulval and anal irritation in patients receiving aureomycin and chloromycetin for chronic brucellosis. The oral lesions resembled those seen in riboflavin deficiency. Transient generalized urticaria, severe solar dermatitis, and fleeting sunburn-like erythemas on areas exposed to the sun have also been noted by this author. Dr. Robert Chobot.

To date, toxic manifestations from aureomycin and chloromycetin administration have not been a serious problem. Nausea and occasional vomiting have been rather commonly associated with the oral form of aureomycin, but if a mild sedative or food is taken prior to the medication these symptoms are usually minimal or prevented entirely. It is rarely necessary to stop the drug. There is some evidence that aluminum hydroxide gel interferes



one of the speakers at the 1949 Stuart McGuire lectures held at the Medical College of Virginia, indicated that he had seen some rather severe skin reactions in patients being treated with aureomycin. In my own experience I have yet to see any skin or mucous membrane complications. Doubtless the more widespread the clinical exhibition of these agents the more frequently shall we see these dermal reactions.

Herxheimer-like reactions have occurred in cases of acute brucellosis at the start of treatment, but there have been no serious consequences. To reduce the incidence and minimize the severity of side-effects of this type the initial dosage in brucellosis had best be small. Doses in the amount of 250 mgm. to 500 mgm. daily for the first two to three days followed by gradual increase to the full therapeutic maintenance level have been advocated.

Anemia, granulocytopenia, renal irritation, liver impairment or significant neurologic disturbances have not been observed.

#### Other Antibiotics

In closing I would like to make a few brief remarks concerning three new antibiotics, namely, polymyxin, neomycin, and bacitracin. Only one of these, bacitracin, is being produced commercially for general use.

Polymyxin (17, 18) has proven its effectiveness in the treatment of human infections caused by certain gram-negative bacilli. Systemic administration has controlled infections due to *Ps. aeruginosa*, Friedlander's bacillus, *H. pertussis*, *H. influenza* Type B, and *E. coli*. Unfortunately, evidence of renal toxicity has been too frequent to justify its use on a practical level. There are apparently four forms of polymyxin, one of which, polymyxin D, is said to have little toxicity.

Neomycin (18, 19) is another development by Selman Waksman, the discoverer of streptomycin, and is produced by a member of the streptomyces group. This antibiotic has about one-tenth the toxicity of streptomycin and is about five times as active. Inhibitory activity has been demonstrated against tubercle bacilli, *Salmonellae*, *Brucellae*, cholera bacilli, and *E. histolytica in vitro* and *in vivo*. Resistance to neomycin so far has not been encountered. Clinical investigations of this antibiotic are being conducted at present.

Bacitracin (18, 20, 21, 22), produced by a strain of the *B. subtilis* group, has been found effective against gram-positive bacteria, cholera organisms, rickettsiae and some viruses including the virus of smallpox. Clinical studies now in progress have revealed its value in the treatment of intestinal amoebiasis when given orally for 10 to 20 days. A recent analysis of 270 cases of medical and surgical infections indicated favorable response in more than 50 per cent. Included in this group were a

heterogeneous collection of cases such as pneumococcal pneumonia, staphylococcal meningitis, endocarditis, ulcerative colitis, cellulitis, infected wounds, deep and superficial abscesses, acute and chronic osteomyelitis, carbuncles, burrowing ulcers, and synergistic gangrene. The antibiotic was administered systemically by intramuscular injection as well as locally when the condition warranted. At present, bacitracin is available in powder and ointment forms intended for topical application only. Certain lots of the drug have caused kidney damage and consequently material for systemic use can be obtained only under special circumstances. Studies are under way in an attempt to develop a purer product. Chief indication for its systemic employment would seem to be in cases with susceptible organisms resistant to other antibiotics or that have failed to respond to other types of treatment.

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## The Antibiotics and Their Mechanism of Action

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**T**HE DISCOVERY of sulfonamides and antibiotics has revolutionized the treatment of most infectious diseases. The original antiseptics and germicides killed bacteria by poisoning or coagulating their cytoplasmic protein. These materials could not be used internally because they killed the cells of the man or other animal in even lower concentration than those necessary for killing the bacteria. The sulfonamides and antibiotics are relatively harmless when given orally or intravenously, and yet they search out and inhibit or destroy the disease-producing germs.

It was recognized from the beginning that these agents were not general protoplasmic poisons but must exert their effect by a specific and more subtle process such as the inhibition of an enzyme system in the bacteria. We assumed that the cells of man did not have this same enzyme system or, if present, the cells were able to utilize an alternate system of enzymes and thus bypass the deleterious effects of the drugs. Investigations soon revealed that sulfonamides, in the doses which could be obtained in the blood and tissues of man, did not kill the bacteria but stopped their multiplication, after which the ordinary mechanisms of defense completed the cure. This experimental work explained the clinical observations made by every physician that sulfonamides must be given for three to five days after the temperature had returned to normal or the patient might have a relapse. The retreatment of the patient, who had relapsed, as the result of too brief a period of therapy, with even larger doses of the same sulfonamide was very frequently ineffective. This clinical observation was investigated in the laboratory and it was found that the organism in the body and in the test tube rapidly acquired an ability to live in the presence of a high concentration of the sulfonamide. This change was of the nature of a mutation by which the bacteria altered their metabolism in such a manner that their enzyme systems were no longer poisoned by the sulfonamide. Such a resistant organism might or might not be susceptible to another of the series of sulfonamides but remained vulnerable to one or another of the antibiotics.

After years of work in the laboratory it was learned that the sulfonamides interfered with the metabolism of p-aminobenzoic acid. They prevent-

ed the synthesis by bacteria of pteryl compounds, derivatives of p-aminobenzoic acid which are related to folic acid.<sup>1</sup>

The antibiotic, penicillin, had many advantages over the sulfonamides. Penicillin was harmless in enormous doses, up to single intravenous doses of ten million units and daily doses of one hundred million units. It was most effective against the gram-positive cocci, the gram-negative cocci causing meningitis and gonorrhea, and the spirochete that causes syphilis. It was useful but not quite so good when used against the entire series of gram-positive bacilli. Penicillin, however, had absolutely no inhibiting effect on the gram-negative bacilli, such as the colon bacilli, dysentery bacilli, influenza and pertussis bacilli, which were controllable at least partially by the sulfonamides.

Penicillin had two other important advantages over the sulfonamides. It could kill as well as inhibit the organism in the tissues, and resistant forms developed very slowly or not at all, even when prolonged continuous or intermittent treatment was employed.

The mechanism by which penicillin inhibits and kills bacteria has finally been discovered.<sup>2</sup> In the presence of penicillin, the susceptible gram-positive organisms are unable to concentrate free glutamic acid within the cell. The resistant gram-negative organisms do not need to concentrate this material in their cells, consequently their growth is not inhibited by penicillin.

Streptomycin is almost entirely harmless to the cells of the body in therapeutic doses but doses of more than 2 grams continued for more than three or four days may injure the vestibular apparatus, and the hearing, of the patient. Streptomycin has a broader range of activity than penicillin; it is effective but usually less effective than penicillin against the gram-positive cocci, gram-positive bacillia and spirochetes. For most gram-negative bacilli it is much superior to the sulfonamides, and it is unique in its ability to kill tubercle bacilli. Unfortunately, streptomycin resembles the sulfonamides rather than penicillin in the rapidity with which organisms develop a resistance to the drug.

Streptomycin specifically inhibits an important oxidative reaction in the bacterial cell—the "oxalacetate-pyruvate" condensation. The same type of intracellular oxidative reaction is occurring in the cells of man but it is not inhibited because of mechanical or possibly chemical barriers of the

Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.

surface of the cell and of the surface of the mitochondria in the cell.<sup>3,4</sup> This then is an example of differential poisoning in which we animals have the advantage over the bacteria.

Aureomycin and chloromycetin are the two newest of the antibiotics. They have many characteristics in common: both are effective when taken by mouth, both cover a wide variety of gram-positive and gram-negative organisms, both are effective against the rickettsial diseases such as typhus fever, spotted fever, Q fever, scrub typhus, and rickettsial pox. The larger viruses such as the psittacosis, lymphogranuloma viruses, and herpes virus are apparently destroyed. The classical form of primary atypical pneumonia responds well but there are other respiratory viruses which cause pneumonia which are not affected by these agents.

Chloromycetin seems to be more effective than aureomycin in the treatment of typhoid fever.<sup>5</sup>

Aureomycin and chloromycetin resemble penicillin rather than streptomycin in the slowness with which resistant organisms develop to the antibiotic.

The mechanism of action is not known for aureomycin but chloromycetin inhibits the action of bacterial esterases that are involved in the hydrolysis and synthesis of fatty acid esters.<sup>6</sup> The same type of enzymes operate in animals and human cells but are apparently protected from the deleterious effect of chloromycetin by the barrier of the cell wall and at the surface of the mitochondria.

Among the newer antibiotics which have not yet come into general use, the following seems to be promising: (1) bacitracin,<sup>7</sup> (2) neomycin,<sup>8</sup> terramycin and polymixin.<sup>9</sup> Bacitracin seems to be particularly effective in mixed infections resistant to other antibiotics; neomycin on both normal and streptomycin resistant tubercle bacilli; while terramycin is even broader in its coverage than chloromycetin and aureomycin and may be as effective in viral influenzae and some other viruses not inhibited by other agents.

From the wealth of therapeutic agents, the clinician is often puzzled about which to choose for a certain patient. One should not forget that excellent results were obtained by the oral administration of the simple and inexpensive sulfonamides such as sulfadiazine in *Streptococcus* sore throat, scarlet fever, pneumococcal and streptococcal pneumonia, *Meningococcus* meningitis and many other infections. Sulfonamides should not be used for *Staphylococcus* infections because they are ineffective.

Penicillin is the drug of choice for syphilis and gonorrhea and for all gram-positive organisms, which do not respond to sulfonamides in 24 to 48 hours. However, it is completely ineffective against influenzae bacillus and Friedlander's bacillus,

pneumonia, and against whooping cough, chancroid, viral and rickettsial diseases. Penicillin is effective by mouth, given in doses which are five times as large as the usual parenteral dose. In some instances, chronic infections of the lungs respond better to a combination of parenteral and inhalation administration, particularly if a bronchodilating substance like vaponephrine or isuprel is added to the penicillin spray. However, penicillin should not be used locally in wounds, in sprays in the nose and mouth, in inhalers or in chewing gum or lozenges. Such local applications may quickly sensitize the patient to penicillin and add to the already rapidly growing group of patients who cannot take this antibiotic without severe reactions.

Streptomycin is the drug of choice against tularemia, bacillus pyocyaneus, Friedlander's bacillus, granuloma inguinale, influenza and pertussis bacilli and tubercle bacilli. However, streptomycin should not be used in a case of tuberculosis in the office or at home, because of the rapidity with which the organism becomes resistant to the drug preceding its use later as an adjunct to an operation or in an emergency such as tuberculous pneumonia, meningitis or miliary tuberculosis.

Whenever there is sputum or other discharge, the treatment should be controlled by the use of smears, stained by the gram stain, and by cultures if possible. Smears and cultures should be made before treatment is started and every two or three days during the course of treatment. If both gram-positive cocci and gram-negative bacilli are present in the original smears, both penicillin and streptomycin should be used from the beginning, or chloromycetin or aureomycin should be employed. If the original smears show only gram-positive cocci and subsequent smears show gram-negative bacilli, then streptomycin should be added as one of the newer antibiotics substituted for both penicillin and streptomycin. Aureomycin is very effective in tularemia, brucellosis, rickettsial diseases, atypical virus pneumonia, and against some of the larger viruses. Chloromycetin is best for typhoid fever and seems to be almost if not quite as good against other organisms susceptible to aureomycin.

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## Economic Factors in Precipitating Psychiatric Disorders

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**B**EGINNING with the premise, "The love of money is the root of all evil" one would reasonably expect to discover that economic factors at least play a complicating part in the neurotic picture. However, there are so many other complications that have made their appearance by the time the patient reaches the physician's office that a special social experiment is necessary to test the hypothesis. Although I would be the last to suggest that World War II were arranged expressly for this purpose, actually, among other things, it did set up such an experiment.

Business depressions, such as the one that began in 1929, usually are not accompanied by an increase in psychiatric illness. Probably this is due to the fact that individuals are not singled out in their misery. Everyone is in the same boat. Not infrequently patients are encountered who improved during such a period for it offered a valid excuse for not being successful. In the case of the veteran the post war period did not lend itself to the same solution. If he were a successful soldier or sailor presumably he could expect to be a successful civilian. It did not take him long after he was separated from the Service to realize that in most cases he was anything but successful. He had only to glance about him and soon was struck with the fact that economically he was outshone by former acquaintances who perhaps were two or three grades behind him in school before the war. Now when he observed these individuals he saw that they were comfortably situated, a home, a car, and a job on which they could support themselves and their families. The veteran naturally concluded that since he had made some sacrifices during the war that in return he should be entitled to more than others, but also noted that if this were true there was no material evidence of it as far as he could observe. After spending the money he had saved during the service, he often found himself a member of that most popular ex-service organization, the 52-20 Club. Of course, he could always have his old job back again, but he could not live on the wages it paid. It was fortunate that on-the-job training was put under way promptly because this certainly eased a difficult situation. The veteran was confronted with a problem of trying to keep up with others who had usually advanced quickly

by virtue of the war. On the other hand he was frustrated because he had been out of circulation for three or four years. It is obvious that he did not want to pick up where he left off, but rather where he would have been had he not been in the service. Since one's expenses undergo a gradual but continual increase as he grows older, he must receive commensurate return if he is to maintain his standard of living. The war created a situation in which the veteran portion of the population could not accomplish this as a rule. The same applied where the veteran returned to school after an absence of three or four years; he was older than the ordinary student and thus required more money. The economic pressure was often severe, particularly if he had acquired a wife and family in the intervening years, and in most cases his wife, his parents or his parents-in-law were called upon to augment his income if he were to carry on.

This state of affairs was frustrating, if not in addition humiliating. Is it any wonder that he would begin to reproach himself, since having thought of himself as a he-man during his military career, he now reflected that he could not even support himself, let alone his family. Had he been forewarned of this contingency, perhaps he could have made a tolerable adjustment to his plight, but in most cases he was precipitated headlong into the middle of it before he had a chance to realize what had occurred. He did not have an excuse to fall back on, such as this is just one of those things that happen. Is it any wonder then that he seized upon the first opportunity to acquire a face-saver? Now the commonest acceptable excuse for not earning a good living is sickness. No one will criticize you for not being successful if illness overtakes you. The chance occurrence of a headache, bout of indigestion, or a vague pain anywhere, provided an excellent excuse. In this connection nothing seems clearer than that the hysterical symptom is acquired by chance and that it gets one out of a tight situation *without loss of face*.

After seeing the mechanism in operation in veterans, it was not hard to pick it out in non-veterans who were under economic stress. Sometimes this economic stress was more apparent than real, by which I mean that the individual was not actually faced with starvation, but was confronted with loss of face in the community. The advertisers represent all manner of luxuries as necessities, and imply that you are just as good as a dead duck if

Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.



you cannot afford them. I was struck with one radio version which opened with a sepulchral voice proclaiming, "Men! Have you ever washed dishes three times a day, day in and day out? Have you ever thought how many times your wife is faced with that awful dishpan full of dirty dishes?" Then followed a sermon calculated to engender sufficient guilt feelings in the man of the house to induce him to part with hundreds of dollars for a combination deluxe dishwasher and garbage disposal unit that would ensure henceforth nothing but grade-A bliss in the home. While I am on the subject, I might as well point out that the automobile manufacturers deduct their share from the vanishing American pocketbook. I feel sure that gasoline is a far more effective agent in destroying the home than alcohol, and I am not speaking of the fire hazard. One authority states that in 1949 one-third of the American public spent more money than it earned. If this be true, I would hazard a guess that we will witness a new out-cropping of psychiatric illness, particularly if people continue to spend more money than they earn—because this cannot go on indefinitely.

Though individuals are loath to discuss their financial position, the doctor should find out in case of a neurosis whether or not economic factors are playing a significant role. It is usually less offensive to the patient if one inquires first, "Are you making enough money to get along on comfortably?" It is not hard to learn by tactful inquiry his monthly income. It usually takes a little more care to get a clear picture of where the money goes. Inquire first about the fixed necessary expenses. A family of three will spend at least \$100 a month for food. As a rule, not more than one week's salary should go on rent. Including other expenses, it takes about \$200 a month to get by for a family of three. Find out if they owe any money, particularly if they have no way of repaying the loan. One will often find that a large proportion of the family income is being spent on luxury goods without the patient having any clear-cut idea of how much money he is spending that way. Few realize that to operate an automobile costs \$60 to \$80 a month. Most individuals are shocked to discover this and will argue a long time until you put the figures in black and white. The biggest expense, depreciation, is hidden for the time being, so this means that it costs \$30 to \$40 a month just to own the car, but not run it. Some have obligated themselves to buy homes far beyond their means. When buying a home, one should not spend more than two-and-a-half times his yearly income, because in this case the monthly payments will amount to one week's salary. Others are paying by installments on an elaborate radio-phonograph combination, for some expensive kind

of electric stove or refrigerator. A few spend too much money on alcohol. A short survey of this sort can usually be made in five or ten minutes and may save an endless amount of time in diagnosis and treatment.

Now I do not wish to give the impression that all neuroses are caused by economic difficulties, but I do wish to make the point that a mild type of neurosis may not be a disability until some economic pressure is put on the individual. When such an individual casts about for a face-saver, likely as not he may select a mild symptom which overnight becomes for him a grave one. As long as he was able to get by fairly comfortably, he did not trouble about his symptoms, but as soon as the squeeze play was put on him, he was only too anxious to grasp at any straw.

In general, since he is dissatisfied with his lot the symptoms are apt to be depressive. The presenting complaint we most frequently encounter is headache; insomnia runs a close second. Then follow in diminishing frequency: somatic complaints, digestive or circulatory; irritability and fatigability. As a rule, the patient does not complain spontaneously about his mood except possibly to say that he worries about everything, but the question, "How does the future look to you?" will bring out the depressive character of the disease. A few more discreet inquiries will often reveal that he is spending more than he is making.

CASE I.—Unemployed person, 32, married, one child 2½. Discharged from the Navy because of "Battle Fatigue." While still in hospital married his sister-in-law's cousin. Went into the chicken raising business with his brother. After one year was obliged to borrow money from mother because the chicken business became unprofitable. Eventually forced to sell out at what the patient calls a profit of \$6,000, quite neglecting to include his debts of \$11,000. During the time the business was headed for bankruptcy he was constantly urging his wife to get a job and even spent \$125 for her to take a PB Operator's course. The wife was reluctant to do this, pointing out that she had to stay at home and look after the baby. He explained "my wife don't understand me, that's why I came home to live with my parents. Anyway she only makes enough money to support herself and the kid." He adds "since I been home I have been going out with a childhood sweetheart—she's separated from her husband." (!)

His presenting complaints are almost self-explanatory: Headaches, pain in the neck, easily irritated, insomnia and indigestion—working makes it worse, especially if he loses his temper!

His symptoms were mild until he began to get into financial trouble. It is perfectly obvious why it was necessary to relieve himself from supporting his wife and child. He tells, of course, that he was obliged to give up work because of his symptoms but, in truth, it is the other way round, the work gave him up.

CASE II.—Machine operator, 25, married, one child 3 months, \$56 per week.

Has been working steadily. Extremely restless; complains "no energy, can't hold my temper, headaches and right much trouble at home," by which he means that he cannot sleep, wife and himself constantly bickering and the little

girl gets on his nerves. He was left with the impression after consulting a physician that he probably had a brain tumor! He flew into a rage when I pointed out to him that he could not afford to run an automobile, shouting that he had not consulted me about his business, that if he could get some medicine to relieve his symptoms he could manage his better than I. After ten minutes he seated himself (he had been turning the door knob in preparation for taking his leave summarily), explaining that he required a car in order to get to his work and to take his wife to church on Sunday! He had thought of and threatened to leave his home on many occasions. It is interesting that the car was of more import than his wife and child! although the cost of the one was equivalent to the other. It was rather surprising that this individual continued to work since his symptoms were quite severe. Perhaps he was afraid that he would have to give up the car.

CASE III.—Used-car dealer, 26, single, residing with mother.

Working until he was hospitalized recently because of a delusion that his business was in such a mess during the previous two months that he should give himself up to the police. A little over two months ago the "bottom dropped out of the used-car market" and he was having a *difficult time financially*, but the business was quite solvent. In addition he experienced a sharp rise in his religious interest which led to him giving up smoking and other "bad" habits. He became preoccupied with the idea that he ought to let the church, which was next door to his property, have the used-car lot. Some of the congregation did object to a business enterprise adjacent to the church. It is worth noting that while he knew this all along he did not worry about it until his depression supervened.

CASE IV.—Spinster, 46, residing with relatives. Does some of the housework.

Complained of pain in the right loin and in the left side of the face, the latter suggestive of trigeminal neuralgia which medical, polysurgical and chiropractic treatment over a period of eight years had failed to relieve. Symptoms began soon after the death of her mother whom she nursed through a lingering illness. She also nursed her father until his death two years ago. While the parents were living, the patient states that she never lacked for anything, but since that time for *financial reasons* was obliged to live with relatives who have come to adopt the attitude of treating her as their servant. Sometime ago she began keeping company with a man who is an alcoholic, as was her father. Realizing that she had no way of supporting herself she began to entertain the notion of marrying this man of whom her relatives disapproved. As soon as they learned of her intention they took steps to prevent her seeing him in the future. After this avenue of escape from her unpleasant situation was closed four months ago she gradually developed a moderately severe depression requiring hospitalization.

#### Discussion

DR. JOHN F. WILLIAMS, Richmond:

It is with pleasure that I discuss Dr. Sutherland's so timely and so excellent a presentation of an important subject.

Most of us will remember that World War I was followed by a period of great economic disturbance. Unfortunately less emphasis was placed upon the neuroses in general at that time, and there was perhaps no association in the mind of any physician of a neurosis and pecuniary distress.

Dr. Sutherland has shown that World War II was followed by some economic stresses which produced neuroses

in certain susceptible individuals. May I add that there were Four Horsemen of the Apocalypse but only one of them was war. All cataclysmic events produce great emotional turbulence.

In this paper we are given figures which must prove useful in surveying a patient's financial status. Such a survey makes so valuable a contribution to our knowledge of the patient's life as to be well worth its cost in tedium and time.

Since the end of World War II great emphasis has been placed on the diagnosis and treatment of the neuroses. Because of this and other factors there is an increase in the number of patients demanding such care. Praiseworthy attempts to cope with this situation have been made, working with the patient's precipitating difficulty rather than with the probable factors contributing to his susceptibility to neurotic illness. Alexander and others have elaborated on the brief-interview technique.

In my own practice, which is limited to the diagnosis and tarteatment of the neuroses, psychosomatic medicine, I find that "flight into illness," as described by Dr. Sutherland, is not on the conscious level. Almost all the patients I see present symptom complexes that are somatic manifestations of their neuroses—psychosomatic illnesses.

Papers such as Dr. Sutherland has presented serve to make us more aware of the increasing importance of the diagnosis and treatment of neurotic illness. As the Rev. Dr. Walker Healy said yesterday in the Invocation, "We must work for the total wellbeing of the human personality."

I appreciate the privilege of discussing Dr. Sutherland's excellent paper.

#### AMBULATORY TREATMENT OF SYPHILIS WITH AUREOMYCIN (C. H. Chen et al., Augusta, in *Jl. Med. Assn. Ga.*, June)

The oral administration of aureomycin in the treatment of various stages of syphilis gave satisfactory results in all cases. The drug was given every four to six hours, day and night, for 11 to 25 days. This study was made to see if the one to two night doses could be omitted.

Two patients with primary chancre, one with a negative and one with a positive Kahn test, were selected. Each was given one gram of aureomycin, four 250-mg. capsules 4 i.d. at four-hour intervals for two weeks.

Patient 1 had painless ulcer on the penis for six days. Blood Kahn test three weeks previously was negative. Indurated ulcer 1.5 cm. in the right inguinal region, darkfield examination positive for *T. pallidum*. All skin tests negative.

Blood Kahn tests done after one, two, four and five months were all negative. The patient remained in perfect health during a follow-up period of five months.

Patient 2 with a penile ulcer of a few days' duration; some tenderness, no pain. Blood Kahn tests had been negative. Hard chancre 1.5 cm. on r. of the coronal sulcus, no enlargement of inguinal lymph nodes. Darkfield examination and Kahn test both positive, skin tests negative.

Two-week course of aureomycin—no tenderness on 2nd day, lesion only slightly improved. Tenth day a darkfield examination, no treponema found. Patient complained of nausea, some vomiting, profuse salivation, headache, diarrhea, insomnia, slight fever, Benadryl 50 mg., phenobarbital 0.03 gm., p.r.n. No complaints the next day except diarrhea which lasted throughout the aureomycin therapy. Ulcer completely healed three weeks later. A blood Kahn test four months after therapy negative. No skin eruptions or other lesions suggestive of secondary syphilis developed during the four months follow-up period.

From the results obtained it appears that aureomycin is effective against primary chancres when administered in the daytime hours only.

# DEPARTMENTS

## HUMAN BEHAVIOUR

For this issue J. R. SAUNDERS, M.D., Richmond, Va.  
Member of the Staff of Westbrook Sanatorium

### MANAGEMENT OF ACUTE ALCOHOLIC INTOXICATION

NO ATTEMPT will be made here to discuss the merits of the most recent methods of treatment of alcoholism. Instead I will discuss briefly what seem to be the most important points in the management of acute alcoholic intoxication.

The individual who is in a state of acute intoxication, as a rule, requires treatment in a hospital or an institution prepared to handle cases of this kind. The physician who attempts to treat such a patient in the home usually runs into so many difficulties that he gives up in despair after a few days and finally places him in an institution, occasionally in a general hospital, where control is about as difficult as that experienced in the home. In a general hospital the patient can frequently demand the type of treatment he wishes to receive, making the handling of such a case very trying on the hospital personnel. Therefore, it seems that a hospital or an institution that is prepared to cope with this type of patient proves the most satisfactory place to handle a problem of this kind.

The handling of acute intoxication, as a rule, varies with the amount of alcohol that has been consumed by the patient, the frequency of its use and the length of time the patient has been drinking. The patient who has merely been on a week end drunk presents a much different problem than one who has been drinking incessantly for weeks or perhaps months. The person who becomes acutely intoxicated during a week end drunk rarely presents too many problems. Usually simple sedation and bed rest for twelve to twenty-four hours is all that is required, while the patient who has been on a prolonged drunk needs much more thoughtful care.

The individual who has been on a prolonged drunk more than likely is suffering with a vitamin deficiency, due to the inadequate diet that he has been receiving. His diet probably has consisted of little more than alcohol for some time. Even though he has attempted to eat a fairly balanced diet, the gastrointestinal tract is in such condition that the patient does not retain his food much of the time. If he does retain it, it very likely is not properly assimilated and absorbed.

Patients who have been on a prolonged drunk are very likely as much in need of adequate treat-

ment as any one suffering with any illness, even though the majority of these patients are quite objectionable and difficult cases to handle.

Two schools of thought still exist concerning the withdrawal of whiskey from these patients. One group advocates the immediate cessation as the best means of terminating the spree. By doing this they perhaps entertain the hope that the painful memories, associated with the suffering that the patient undergoes with this type of treatment, will act as a deterrent in the future. The second group prefers the more gradual method of withdrawal, feeling that fewer risks are run and that possibly a more sympathetic approach by the physician will produce less psychic trauma and better coöperation on the part of the patient. I am sure these two methods of approach have about the same number of adherents. The writer uses the latter program.

Regardless of the withdrawal procedure, some type of sedation is necessary. Barbiturates and paraldehyde seem to be the drugs of choice. No matter which drugs are used a careful check should be made from day to day, as there is quite a bit of danger of these drugs being substituted for alcohol and the patient finds himself 'hooked,' as he describes it. Paraldehyde perhaps is the drug of choice due to its less toxic features, but its disagreeable taste in a nauseated patient is an objectionable feature. In my opinion, barbiturates should not be used for a period longer than three or four days.

Restoration of vitamins should be begun at once. Since the patient is usually dehydrated at the time of admission, intravenous fluids should be administered. As a rule, my patients receive 1000 c.c. of 10 per cent glucose in isotonic sodium chloride solution. To this solution I add an acceptable vitamin B complex, and in most instances I fortify the B complex with 200 milligrams of thiamine chloride. In many instances, I also add 10 units of insulin to the solution. This procedure is repeated at regular intervals, depending upon the condition of the patient. Usually by the third day fluids can be discontinued, but the vitamin B complex in 5 c.c. of diluent should be given intravenously at daily intervals for several days, certainly until you feel that the gastrointestinal tract has recovered sufficiently to tolerate oral vitamin medication. Even though vitamins can be given orally, we, as a rule, give parenteral injections of thiamine chloride, 100 to 200 milligrams daily for some time. This is more or less a prophylactic procedure aimed at any alcoholic neuritis that is always a potential possibility in these patients.

It is very important to examine the patient physically as soon as possible. The heart which has borne the brunt of prolonged stimulation by alcohol may need immediate attention. Not only has



the heart borne the brunt of the ravages of alcohol, but very frequently the lungs, liver and kidneys are not functioning properly. Every effort should be made to treat any physical condition that is present, as the acute condition may well become chronic and a permanent disability ensue.

If the patient is in a stuporous and confused state, nursing care is very important, for it is not unusual for a patient to fall from bed and injure himself if not properly watched. The patient's tongue requires special attention during this stuporous state, especially where he is passed out limp. The tongue may drop back over the trachea and asphyxiation may ensue.

In conclusion, a patient in acute alcoholic intoxication should receive:

(1) Treatment in a hospital or institution prepared to treat cases of this kind.

(2) Especial attention should be directed toward the amount and type of sedation that the patient receives, avoiding by all means any chance of addiction.

(3) Restoration of vitamins and fluids to a badly depleted system is very essential.

(4) Gradual withdrawal of alcohol seems the best procedure.

(5) Especial attention to the patient's physical condition with proper treatment of any abnormal findings.

(6) Adequate nursing care is very important.

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## PEDIATRICS

ALBERT M. EDMONDS, M.D., Editor, Richmond, Va.

### ASTHMA IN CHILDREN: SALIENT DIAGNOSTIC PROBLEMS\*

SINCE 50 per cent of adult allergy has its onset in childhood, early diagnosis and therapy should greatly reduced the incidence of asthma of adults. Eczema is the forerunner of many cases of asthma.

A detailed inquiry into all the circumstances surrounding each of the child's attacks is invaluable.

Study of smears of nasal secretion: The child blows his nose onto waxed paper, the secretion is spread on a slide and stained with Hansel's special stain. A panoramic view of the slide discloses whether eosinophils or neutrophils predominate, or whether epithelial cells, bacteria or foreign materials predominate. One can then state that the nasal condition is of allergic, infectious or irritative origin. If feasible, any patient whose attack of asthma persists for 24 hours should be examined fluoroscopically or by roentgenograms.

Much harm is done by too hasty employment of skin tests. In many cases they give negative results. It requires time for the skin to become sensitized. The condition may clear spontaneously. Skin testing is to be done after several asthmatic attacks over a period of at least a year. The protein skin test compares favorably with other important diagnostic procedures.

The family history, the specific history of the child and an investigation of the environment, all aid in the appraisal of the case. Chemical examination of the blood, blood and nasal cytologic studies, roentgenograms of the sinuses, chest and wrist bones, Mantoux test, urinalysis, and psychosomatic evaluation help to appraise and rule out secondary factors. Pertussis is differentiated from asthma by throat spray culture, by high lymphocyte count early, by absence of allergic history and

\*Abstracted from article by Bret Ratner, M.D., *Jour. A. M. A.*, Vol. 142, No. 8, Feb. 25th, 1950.



by the type of cough and whoop. In early infancy cystic fibrosis of the pancreas also may simulate asthma. This diagnosis is made on the basis of the persistence of cough, disease of the lungs, failure to gain and the character of stools—large, fatty, homogeneous and foul smelling. Intractable cough with asthmatic breathing in early infancy may be due to pressure of tuberculous lymph nodes on the tracheobronchial tree, producing a passive bronchoconstriction simulating asthma.

The type of status asthmaticus met with in adults is rare in childhood; then all the ingenuity of the physician is required in the terrific struggle against death.

Narrowing of the bronchial tube due to outside pressure should be differentiated from constriction from spasm of the bronchiolar smooth muscles.

The term obstructive asthma might be applied to all conditions resulting in status asthmaticus, for even the true allergic bronchiolar constriction is complicated by mucous plugs in the bronchi.

Among the causes of status asthmaticus in the infant and child are:

1. A foreign body in the esophagus—by its bulk or by secondary swelling, or by both.
2. Thymic compression stenosis or double aortic arch.
3. Substernal goiter, sometimes congenital.
4. Adenopathy: the most common site is at the bifurcation of the trachea.
5. Cicatricial stenosis due to (a) a suppurating mediastinal gland, or (b) prolonged sojourn of a foreign body.
6. Foreign bodies in the air or food passages.
7. Subglottic laryngitis associated with subglottic edema.
8. Papillomas of the trachea or larynx.
9. Pulmonary abscess, bronchiectasis and bronchopneumonia.
10. Acute massive atelectasis or collapse of the lung.
11. Anaphylactic shock (nonfatal) resulting from injection.
12. Massive contact with an allergenic dust.
13. Aspiration pneumonia or laryngotracheobronchitis.

Since treatment depends so largely on diagnosis, alertness in determining the cause of any case of severe wheezing is of primary importance.

Various types of "allergic pneumonitis," which present shadows in the roentgenogram, occur often in conjunction with a high temperature. Such varied diagnoses as fibrosis, tuberculosis, bronchopneumonia, bronchiectasis and lobar pneumonia have been made. These pneumonic infiltrations are fleeting as a rule, but may be prolonged. They are caused by pollen sensitivity, parasitic infection or drug allergy, and they are truly allergic episodes.

Nonallergic episodes in the allergic child must always be kept in mind, e.g., the cough following strenuous exercise or resulting from irritation produced by strong odors, such as that of fresh paint or camphor. Much more serious are the pyogenic intercurrent pneumonias which are amenable to specific treatment. The signs and symptoms are often those of true asthmatic seizures, and can be differentiated only by the aid of the fluoroscope or roentgenogram.

Great emphasis must be laid on psychosomatic incidents, which occur only too frequently once the pattern of asthma is established. However, these psychic disturbances must be differentiated from true allergic episodes, and the somatic phase must not too readily be relegated to second place.

## NEUROLOGICAL SURGERY

### THE ROLE OF SYMPATHECTOMY IN THE RELIEF OF PERIPHERAL VASCULAR DISEASE AND CERTAIN PAINFUL AND PATHOLOGICAL CONDITIONS OF THE EXTREMITIES AND TRUNK

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THE WRITERS<sup>1</sup> have previously discussed in this journal the role of sympathectomy in the relief of patients with vascular hypertension. The present communication has to do with its value in other pathological lesions, as they are managed today in Neurosurgical clinics. The following conditions are often relieved by sympathectomy of the appropriate ganglia and intervening chain:

(1) *Raynaud's disease*—a curious vascular entity occurring usually in young women, involving as a rule the upper extremities only and characterized by peripheral vasospasm, which produces blanching of the fingers, intolerance to cold and even gangrene of one or more fingers if not relieved by appropriate measures. Sympathectomy of one or both arms, as indicated, affords marked relief and protection of the involved extremities from further attacks.

(2) *Buerger's disease* is also a primary vascular disorder, frequently seen in smokers and particularly prone to occur in Jews, although not confined to them. This disease—in contrast to Raynaud's disease—is largely confined to men and involves the lower extremities more frequently than the upper. It is often associated with migratory phlebitis in the extremities and a definite inflammatory process is often present in the vessels. Sympathectomy will usually afford relief in these patients

and occasionally save a threatened extremity from amputation, even in those patients in whom preliminary tests (novocaine block, spinal anesthesia) would not suggest a particularly favorable result from sympathectomy.

(3) *Arteriosclerotic peripheral vascular disease.* This condition occurs in the later decades of life, almost invariably involves the lower extremities rather than the upper, and is characterized by one of two syndromes: (a) intermittent claudication as demonstrated usually by pain in the calves after walking a short distance and relieved almost immediately by rest; (b) severe obliterative vascular changes in the terminal digits of the feet, associated either with marked blanching, or cyanotic discoloration with imminent gangrene. Sympathectomy is of more value in the former than in the latter syndrome as a rule, but even an occasional case of the latter is markedly benefited by removal of the lumbar sympathetic chain.

(4) *Phantom limb and amputation stump pain.* In many cases in the last war, seen and operated upon in military hospitals, as well as those seen in civilian practice, it was definitely shown that, although sympathectomy may be of benefit in these lesions, it must be done *early* (*within a few weeks of trauma*) to be of any appreciable benefit, before a fixed pattern of pain, or opiate addiction has developed.

(5) *Hyperhidrosis.* This distressing affliction—when seen in its fully developed state—is characterized by profuse perspiration of the hands. In women of the secretarial occupations, for example, or in individuals who meet the public constantly and of whom frequent hand-shaking is required, the condition constitutes a real and embarrassing disability. Sympathectomy of one or both arms, as indicated, affords marked relief, as one of the main effects of sympathectomy is the production of a completely dry extremity. The feet—less often involved—are likewise relieved by lumbar sympathectomy.

(6) *Non-healing fractures of long bones and joints; non-healing leg ulcers.* These lesions are often markedly benefited by sympathectomy on the basis of improved blood supply by peripheral vasodilatation after sympathectomy. The operation may well be borne in mind when the clinician is confronted with these not infrequent intractable cases.

(7) *Visceral pain in the trunk.* Recently, it has been shown that various visceral lesions, including pancreatitis (often with calcification) and retroperitoneal sarcoma, that produce deep-seated chronic and uncontrollable pain, are considerably or markedly relieved by thoracolumbar sympathectomy, or by splanchnicectomy alone on one or both sides, as required. These procedures are particularly to be

considered after laparotomy has demonstrated no remediable surgical lesion, or if disabling pain persists after the pathological lesion has been otherwise successfully repaired.

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## HISTORIC MEDICINE

### MEDICAL HISTORY IN MEDICAL WORDS

"MERE WORDS" does not mean that the proper usage of words is unimportant. The expression implies only that words of promise or threat should be backed up with deeds. Since recorded history began, there has never been a time that words were used with such reckless disregard of their meanings as at the present time, or a time at which so few of the literate knew or cared anything for accuracy, to say nothing of elegance, of expression.

Since Colonial times Philadelphia has been the center for sound learning. As it was said in ancient times, "All roads lead to Rome," so it was said for 200 years in this country, "All medical roads lead to Philadelphia;" and not a few still prefer that medical offerings bear the stamp of her approval.

In the galaxy of great names in Philadelphia medicine, none shines with such brilliance and steadiness as that of Pepper. Read what the contemporary great Dr. Pepper<sup>1</sup> offers for the consideration of those who would know.

The word carotid is derived from the *G. karoun*, to stupefy. In ancient Greece the peripatetic mountebanks would cause a goat to fall unconscious by pressing on the carotid arteries in the neck, and to return to normal by relaxing pressure. This was given credence by Morgagni (1682-1771), but John Bell later scoffed at him for doing so. Still later Astley Cooper and others demonstrated that in goats and horses, but not in man, the carotids supply the entire blood flow to the brain, and in 1896 Leonard Hill wrote, "so in spite of Bell's scoffs, the mountebanks were in the right."

Sudhoff decried the habit of dating everything from Hippocrates: "we now know that in those parts of Asia Minor where Greek was spoken and in the outlying islands, many an able medical thinker flourished before Hippocrates. . . ." Hippocrates merely recorded the current opinion. Egypt contributed words including the root of *hyalos*, meaning glass, which we use in *hyaline*, and from Crete came a group of terms ending in *-enth*, or *-nx*, such as *salpinx* and *mininx* from which we get *salpingitis* and *meningitis*. But the bulk of his vocabulary was of earlier Greek origin.

1. O. H. P. Pepper, in *Transactions & Studies of the College of Physicians*, Philadelphia, April.

Take the familiar word *inoculate*. In the medical dictionary all we find is that it comes from the Latin *in*=in, and *oculus*=an eye. This is meaningless unless one knows that in the days of Ovid, *oculus* meant a bud and *inoculatio* meant a graft. The origin of some of the medical terms we frequently use has been completely lost.

Greek medicine reached its highest level under the Alexandrine School in the third century B. C. under the leadership of Herophilus and Erasistratus. In the second century B. C. physicians of that discipline began to invade Rome, where they conquered the native Latin medical terms, but their Greek was much changed in the process. The G. *hemicranion* became *hemicranium* in L.; in France the same process made it *demicraine*, then *migraine*, and when it crossed the channel after William the Conqueror, it was anglicized to *the megrims*. In Rome, the foreign G. sounded more learned, just as today ophthalmologist sounds far superior to oculist. One can visualize the G. physicians "putting it over" on the local doctors with a Greek diagnosis of *nephritis*, not bothering in anatomy to hellenize the L. term *ren*. We still use many L. words for anatomical structures, and name the diseases of these structures in G.: the portal vein from the L. *porta*, a gate or door; but phlephlebitis from the G. *phyle* meaning a gate or door, *phlebs*, a vein and *-itis*, inflammation.

One group of L. words resisted the invaders—terms ending in -igo, -ago, -ligo, or -lago. Today we meet most of them in our dermatological terms—prurigo, impetigo, vitiligo, intertrigo and lentigo. In the other branches of medicine, we still use lumbago and vertigo, which, by the way, should be pronounced "vert-eye-go." Rubigo was one word for rust and was used by Ovid for discoloration on the teeth.

As time passed many words were changed in form, many also changed their meaning. The G. term *neuron* previous to the time of Aristotle meant anything of a fibrous nature and in Athens a cobbler was a *neuro-rhaphos*, one who sews with tendons. Aristotle limited the word neuron to the nerves, and thus prepared the way for all our present-day terms from this root. Today the word neuron has gained an even more limited meaning.

Astragalus started off to mean a vertebra. The Greeks of the Iliad carved their dice from the *astragalos* of the neck of sheep and so the term came to designate one of a set of dice. The Roman soldiers much later took over the word with this latter meaning, but applied it to the heel bone of horses from which they were accustomed to carve their dice.

Hippocrates used the word *arachnoid* (like a spider web) as a name for scum on the urine; Galen shifted it to a plexus of nerves or veins,

but it did not acquire its present application to the membrane over the brain until the middle of the seventeenth century.

*Trachea* was an adjective and meant nothing but rough. It is in the feminine to agree with the word *arteria* with which it was originally combined. In the time of Aristotle it was believed that the *arteria* contained air, hence their name, air tubes. Aristotle called the arteries smooth—but he considered the windpipe a rough artery. The cornea of the eye used to be the *cornea tela* (horny web or tissues), but the noun was dropped and the adjective cornea became a noun. The same fate happened recently to the word *mater* of the fanciful terms pia mater and dura mater, the tender and the strong mothers or protectors of the brain. Today pia and dura are used as nouns.

Autopsy comes from *autos*, self, and *opsis*, to look at. In the third century B. C. *autopsia* denoted those observations on a patient made by the physician himself, in contrast to the *historia* supplied by the patient.

During the Dark Ages the original writings of the fathers of medicine went, so to speak, out of print and were later retranslated from earlier Arabic copies. They were also copied from manuscripts which had been preserved, especially in monasteries. In this process mistakes were often made, or when the translator could not deal with an Arabic word he left it unchanged with the result that we today have such terms as alcohol and alchemy. *Al* meant merely 'the,' while *koh'l* meant impalpable. *Koh'l* was used especially of the fine black powder used on the eyebrows as a cosmetic. Even in the fifteenth century the term alcohol was applied to chemical powders and essences, and gained its present implication when the word appeared in the phrase "alcohol of wine."

To the retina, which means a net, Galen had applied the word *amphiblestron*, which means either a surrounding coat or a fisherman's net. Perhaps some of the words for which we have no derivation or explanation came about in this same fashion.

*Abdomen* was used in the time of Pliny. Perhaps it is derived from the Latin *abdere*, to hide. *Mediastinum* in ancient Latin meant a slave, servant or intermediary; position intermediate between the two halves of the chest?

There is not even a guess about the origin of *omentum*; whereas *testis* has been said to come from *testum*, a little pot, or from *testis* meaning a witness—perhaps a witness to manhood.

The G. *psora* meant the itch and was applied to a number of skin conditions. But the usual psoriasis does not itch.

Beaumont reported his studies of digestion in Alexis St. Martin in 1825-6 only a minute ago on



the clock of medical history—and yet his alvine discharges, muriatic acid and cataplasma all sound unfamiliar to us. Alvine comes from the *L. alvus*, the belly or bowels and its meaning is clear although the word is no longer employed. From the *L. alveus*, a cavity or trough, we derive our current terms alveus in the brain, and alveolus in the lung and jaw. Muriatic takes us back to the *L. muria*, brine. Beaumont applied a poultice to Alexis but he called it cataplasma, *G., plasso*, I mold. We see it in plasma, plaster, plastic, plasmodium and cytoplasm.

About 800 A. D. Charlemagne worried about the prevalence of venereal disease and established governmentally-controlled brothels in the vain hope of reducing the incidence of disease. These were popularly called *clapiers*, or rabbit warrens; hence our slang term clap.

Shingles, the popular name for the herpetic eruption which almost encircles the chest, is the corruption of the *L. cingulum*, a girdle, and so is the Britisher's name singlet, for an undershirt.

What is the connection between the tartar on our teeth and tartaric acid? The latter substance is not found in the former—but both derive their names from the *G. tartaron* or *L. tartarum*, the incrustation on the inside of a wine vat.

Frenzy is an eroded popularization of phrenitis from the *G. phern*, which was applied to both the diaphragm and the brain. Hence the phrenic nerve and phrenospasm on the one hand, and phrenology and phrenitis on the other.

Ammonia was so named because it was first obtained from camel dung at the shrine of Jupiter at Ammon in Libya.

One can imagine a muscular Greep rippling his biceps and saying "it looks like a mouse (*G. mus*) running up and down under my skin." Then *musculus*, a little mouse.

The *G. enteron* meant no more than our "innards." The lower end of the bowel was considered the most important—the *arch-enteron*—just as we say archduke or archbishop. Somewhere along the line the word enteron was dropped and arch came to be used alone as a noun. This appears in Chaucer as *arse*, the harsh diphthong ch having been changed to s. Arse came to this land and was thought to be merely the Britisher's "broad a" pronunciation, which was promptly rejected here, hence ass, not the donkey.

Endothelium is derived from the *G. endon*, within, and *thale*, the nipple. Ruysch (1638-1731) observed the layer of cells covering the papillae of the tongue and chose the name Greek *epi*, upon, *thelē*, the nipple, which was the closest he could come in Greek to papilla. So came epithelium to be born. A hundred years later, similar cells were found within the body by His, and these he named

endo-epithelium with the *epi* omitted. Still later mesothelium was coined.

Ruysch started a family of terms—on, within, the middle of the nipple, tumors of each of these, and so on. This is the sort of story our medical students should know instead of learning the words as a somewhat superior parrot might.

van Helmont originated the word gas, from the *G. chaos*, confused, for he suspected that a gas was a confused state of primordial matter. The root electro- comes from the *G. elektron*, amber, because of the phenomena seen when amber was rubbed with fur.

Many of the recent coinages are counterfeit. Richet chose *anaphylaxis* to describe a theory which has since been discarded. Antibiotic is an absurdity; *thalassemia*, a confusing compound.

Anyone tempted to coin a new word should obtain the best advice available, and perhaps there should be a national council on scientific terminology whose approval would have to be obtained before a new term were set free to plague us all for generations. Such a council would approve *cryoglobulin*, a new word for proteins precipitating from cooled serum, and *estrogen*, a producer of *estrus*, which, in turn, came from the *G.* word meaning desire or a gadfly which frenzies you.

It is a hundred years since *bacterium* appeared in English. With the development of this science a whole new vocabulary was required and no help was to be found in Hippocrates, Celsus or Galen.

*Culture* is an old Latin word from the countryside. *Coccus* was a berry, *germen* meant to sprout, *bacillus* a little rod. All straight from the Roman orchards and farms. *Strepto*—*G.*, twisted—but it came to be applied to jewelry of twisted metal, and so to mean a chain, in which sense it was adopted into bacteriology. *Staphyle* was nothing but a bunch of grapes.

Toxin comes from the Greek word meaning a bow. Arrow poisons were called *toxikon pharmakon*, pharmakon meaning drug, but the latter word was eventually omitted and *toxikon* was latinized as *toxicum*, a poison. Toxophily is the name given to their sport by addicts of archery.

The Latin *virus*—a slimy liquid, a poison or even an offensive odor or taste—was adopted into English over 35 years ago. A toxin and a virus, both originally poisons, but how very different today.

*Monilia*, a string of beads, *incubate*, to lie in, or on, and so related to the male *incubus* or nightmare which lies on you, in contrast to the female *succuba* which lies under. It is historically interesting that the word *incubatio* was also in ancient sanctuaries of Aesculapius in the hope of being cured of disease.

No more examples are needed to make it clear



that the history of words gives a better panorama of the development of bacteriology than would be a listing of the names of great personages. These have their rewards in the horrible eponyms—salmonella, nocardia, brucella, etc.

Let us now look at a few words from ancient G. which have changed their meaning.

Poikiloderma, *poikilos*, variable, was employed in Euripides to describe a piebald skin; today an atrophic state of the skin. *Pityriasis* used to be the name of what today is called seborrheic dermatitis, a branny or scaly condition. *Pemphix* from which we derive pemphigus meant a pustle, a blister, a breath, blast, drop, cloud or ghost. *Tinea* in Roman days meant a gnawing worm which devoured manuscripts, a use reflected in our lay term bookworm; while it reappears in our term ringworm.

*Phrynoderma*, having a skin like a toad, takes us right back to the fourth century B. C., even though Phryne, who posed for many famous Grecian statues, was a beautiful woman. Perhaps the word was a compliment and compared to the smooth white skin of the toad's belly.

Your dentist tells you he is going to test the pulp of one of your teeth with an electrical vitalometer. You explain to him that Cicero limited the use of this word *pulpa* to the soft flesh of the breasts and buttocks of young maidens, and that for testing the sensitivity of these, it seems to you that there are better and more primitive methods than the use of a vitalometer.

A concept that a disease suddenly attacks the body we find in the G. *epilepsia*, *epi*, upon, *lepis*, a seizure; *L. impetere*, to attack, which is the root of impetigo, a skin disease often developing suddenly; we see it in the French *la grippe*, which grips us suddenly. You can add to this list.

In Rome, a *tonsilla* was a mooring post for boats, standing out from the bank of the Tiber; today a tonsil stands out from the side of our throat and is a happy mooring place for passing streptococci.

*Idiot* goes back to a Greek word meaning an ordinary person, one not holding office—from this it came to mean a simple or uneducated individual, then one who is feeble-minded.

Organic chemistry today is the chemistry of living substances but the ancient G. *orga* meant an instrument or a tool. Plato applied it to an organ of sense and by the seventeenth century it was applied to the organs of the body, so it has had its meaning changed completely about. On the other hand, *nausea* has always meant sea sickness, and *skeleton* came from the word signifying dry and we still speak of dry bones.

Medical men love their chosen profession; they want to learn all they can about her. My thesis in this talk has been that the words of medicine are worthy of our study to this end.

## RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M.D., Editor, Charleston, S. C.

### THE PRESENT STATUS OF THE TONSIL AND ADENOID PROBLEM

WHAT Illington<sup>1</sup> calls "the remarkable antipathy of many for the tonsil" has somewhat abated, but but this antipathy is still a source of therapeutic evil.

This authority directs attention to the great variation in incidence of tonsillectomy in different areas, and of the much greater frequency of performance of the operation among the rich than among the poor.

Other pertinent observations:

There have been a few bacteriological studies of tonsils removed, but little correlation of the findings and the symptoms of the patient.

A streptococcal infection commonly persists after the operation.

The incidence of colds and otitis media was less in an operated-on group for the first three years after the operation, but became greater thereafter than in the control group.

Inaccuracy of diagnosis has led to many unnecessary operations. It seems certain that many of the symptoms for which tonsils and adenoids are removed are, in reality, due to infection of the nasal sinuses. Most papers make no mention of this.

Adenoid facies may be due to any nasal obstruction, and is not due merely to adenoids.

Mouth-breathing may be nothing more than a habit, or may be due to nasal obstruction, malocclusion or mental defect.

So-called colds are often an allergic rhinitis or sinus infection.

Postnasal discharge is in many cases due to a sinus infection, cervical adenitis to dental caries, septic places on the face and scalp and pediculosis capitis.

It is generally thought that the function of the tonsil is that of immunity production. Most children acquire relative immunity to upper respiratory tract infections at the age of six or seven, and thereafter the tonsil decreases in size. It is possible that the regeneration of lymphoid tissue which follows the removal of tonsils and adenoids is designed by nature to help to produce that immunity. We do not know at what stage the tonsil becomes more of danger than of value to its owner.

The theory of focal sepsis has largely fallen into disrepute. It is possible that once nephritis has developed the diseases pursues its course irrespective of the removal of the source of infection. There is no evidence that tonsillectomy has proved

<sup>1</sup> J. R. S. Illingworth, Professor of Child Health, University of Sheffield, in *Proc. Royal Soc. of Med. (Eng.)*, May, 1950.

of any value in nephritis. Much the same applies to rheumatic fever.

The Registrar-General's Returns show at least 85 deaths each year from the operation under the age of 15—certainly an underestimate, because deaths are ascribed to other causes, e.g., pneumonia.

The American National Foundation for Infantile Paralysis advised that no operation on the nose and throat should be performed during an epidemic of poliomyelitis.

Many have found infection of the sinuses to be commoner in those who have had a tonsillectomy than in those with intact tonsils. The occurrence of otitis media after the operation is well known.

The writer in an investigation of 300 children with very frequent colds found that the third commonest factor from which the colds originated was the operation on tonsils and adenoids. Many others have found a greater incidence of infections of the upper respiratory tract.

In an investigation of nephritis in children the writer found that 18 (5%) of 365 cases of nephritis immediately followed, and were therefore presumably initiated by, the operation. The operation during the course of the nephritis caused an exacerbation in 28 out of 119 children (24%).

It is normal for tonsils to enlarge at the age of four to six, when immunity to infection is developing.

#### SUGGESTED INDICATIONS FOR TONSILLECTOMY

1. The operation should be recommended by a physician or surgeon only if he would have it done on himself, under the same circumstances, or on his own child, due regard being paid to the possible risks of operation.

2. Tonsils should be removed on account of frequent tonsillitis with fever—three or four attacks a year.

3. Tonsils should probably be removed after a peritonsillar abscess.

4. Tonsils should be removed in the (very rare) cases in which they are so large that they cause obstruction to respiration.

5. Tonsils of diphtheria carriers should be removed after other treatment has failed.

6. Adenoids should be removed if they are causing obstruction to the Eustachian tube, or are causing mouth-breathing, or are preventing the drainage of secretions, at whatever age the trouble occurs.

The writer cannot express an opinion as to whether the tonsils should be removed at the same time as the adenoids, or whether adenoids should necessarily be removed when tonsillectomy is performed.

If the operation is to be performed:

1. It should be done at a suitable time of the year.

2. It should be done when the child is an inpatient, never as an out-patient.

3. The child, if old enough, should be told about the sensations he is going to experience.

4. He should be given full premedication, so that he does not experience the unpleasantness and frightening experience of an anaesthetic.

5. The operation should be done by dissection.

6. The child should have proper convalescent treatment.

7. He should be properly followed up so as to ensure that the infection for which the operation was performed has been done away with.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### A PLEA TO THE HOSPITAL TRAINING SCHOOLS

THOSE LEADERS in the hospital world who are operating training schools for nurses can be of an inestimable value to the public through the graduate nurses if they will observe more closely the needs of the smaller institutions and their doctors. Over-specialization is not peculiar to the nursing profession but it is equally hampering the usefulness of a great number of our educational institutions and organizations. The average R. N. could be taught more concerning the daily requirements of the hospitals and the patients with great advantage to all parties concerned.

There is no reason why a graduate nurse should not be taught to take blood for a Wassermann test, give intravenous medication, do a urinalysis and complete blood count, as well as some of the record work including simple bookkeeping and filing. If she were taught how to do these things she would be able to render better service in both institutional and office work, much of which is now either neglected entirely or requires someone from another department to render.

Three of the 36 months training is all that would be required to give the nurses a thorough working knowledge of the principles and technique necessary. A test or procedure will have to be repeated on some cases, but so it is sometimes with tests done by clinical pathologists. While in training, if a nurse does one urinalysis and one complete blood count, draws blood for one Wassermann examination, fills out one admission card, writes one receipt or takes care of one account daily, during the three months of this special training, she will become proficient enough to receive preference of employment by any hospital or doctor.

The benefits accruing to the nurse are practical and remunerative. For instance, a nurse on duty that can make an emergency complete blood or urine examination in the middle of the night, while she is on general hall duty, or who can admit a patient, accept payment and make the proper records, will not remain in a low position on the nursing staff, or on a lower level of salary. Such a nurse who elects to accept a position in a doctor's office will immediately earn a better salary than the nurse who has not received this special training.

Few doctors today open an office without employing a graduate nurse and those who do so, soon find that it is to their advantage to have an R. N. assist them in their office. The doctor's problem is to find a nurse who has graduated from a school *small enough* to recognize the value of this special training and incorporate it in the curriculum.

My plea here is for the large training schools to recognize the great need of this special training in a practical way and if need be, leave off some history of nursing, chemistry, biology, etc., in order to make place for at least three months practical training that will qualify all R. N.'s to do something besides give medicines and chart them.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### FLAT FEET IN INFANTS

WE SELDOM think of flat feet as an affliction of infants. A Washington surgeon<sup>1</sup> calls attention to this matter, urges treatment beginning on the third day and offers an excellent prognosis.

A congenitally flat foot can be detected as soon as the infant is born and the second or third day is the time to start treatment. A well nourished baby's foot appears flat because of a plantar pad of fat lying under the arch, and this circumstance has led to the erroneous conclusion that there is no well defined arch until walking is started.

Most important is the relationship between the foot and the leg. Outward rotation or pronation of the foot is usually due to weakness of the tibialis muscles and relaxation of the ligaments on the medial side. Such weakness must be presumed as diagnostic of congenital flatfoot. One or both feet may be involved, and the relaxation may be so great as to allow contact of the outer border of the sole with the side of the leg.

If the affected foot is turned inward into a varus position no resistance is encountered, but the foot soon regains its habitual attitude of valgus. If the infant attempts to turn the foot inward, the slight resistance will prevent completion of the move-

ment. Because the foot is habitually kept turned out, the inner side of the ankle appears more prominent than the outer.

The medial surface of the leg of a congenital flatfoot appears concave due to underdevelopment of the tibialis anticus muscle, and gives the appearance of bowing of the tibia. Because of the relaxation and ease with which the foot is moved, congenital flatfoot is not as dramatic a deformity as congenital clubfoot, and this explains why in many instances it is not recognized until walking is started.

The treatment of congenital clubfoot with corrective plaster boots has been eminently satisfactory. A light plaster boot is applied as soon as possible to hold the foot in complete varus; replaced after a week, then after 10 days. Some improvement is seen on removal of the second plaster, but treatment should be continued for a month. In most cases this is sufficient, but observation should be maintained until walking is started. If there is a tendency for the foot to revert to its valgus position, a corrective plaster boot should be applied and left on two weeks. A satisfactory correction is achieved when the foot is held habitually turned in slightly.

A semiresilient irregular surface is the ideal one for stimulating the supporting muscles of the arch as well as developing the leg muscles which must lift and propel the weight of the entire body.

### MANAGEMENT OF ACUTE HEAD INJURIES

FEW ARE THE PRACTITIONERS who do not have the care of head injuries. A specialist in this line<sup>1</sup> says the general man should care for most of these cases, states the proper procedures and the indications for referral.

The commonest head injury is mild, or severe, concussion of the brain, caused by a blow. This unconsciousness lasts from a few seconds to many hours. A hemorrhage the size of a match head in the pons usually results in death.

Life-saving measures, as O administration, enable the brain cells to metabolize properly, and thus decrease their own edema, and stimulate the vital functions carried on throughout the cardiovascular system. The patient is stimulated with caffeine *IM* at short regular intervals.

Subtemporal decompression for cerebral edema has been largely replaced by osmotic agents, most efficacious being 50 per cent sucrose *IV*, in dosages up to 100 c.c.; this may be repeated q. 4 h. Glucose is unsatisfactory since it causes a secondary rise in cerebrospinal pressure.

Occasionally magnesium sulfate, 50 per cent, one oz. daily, by mouth to combat cerebral edema is efficacious. In extreme cases the magnesium sul-

1. M. H. Herzmark, Washington, in *Med. An. D. C.*, June.

1. W. G. Haynes, Birmingham, in *Il. Med. Assn. An.*, May.



fate can be given rectally via a continuous Murphy drip.

Maintain bodily fluid requirements—two to three liters per day—rather than dehydrate.

Restlessness: Sodium luminal, gr. 1 or 2, hypo.; paraldehyde, 4 or 5 c.c. *IM* (directly from the bottle), is a valuable drug for this purpose. Rarely is it necessary to use chloral hydrate and bromides.

Convulsions: Sodium amylal *IV* in small dosage—usually two or three grains—given slowly. Phenobarbital can then be given by mouth.

Headache and pain: Coal-tar derivatives and small doses of codeine. Barbiturates by mouth or suppositories for insomnia and restlessness.

P., r., and b. p. are to be taken at very frequent intervals, mainly to determine the state of the responses.

Simple linear skull fractures are of no importance. Treatment of the accompanying cerebral concussion or edema should bring recovery unless brain damage is severe.

In compound skull fractures, refer to neurosurgeon.

Depressed skull fractures usually constitute an indication for surgery.

Basal skull fracture *per se* is not an indication for surgery. Blood in the spinal fluid need occasion no concern if it is clearing upon repeated spinal punctures. Basal skull fracture often causes bleeding from ear, eye, nose, or the mouth. No direct treatment of this is necessary beyond penicillin or sulfa. The orifice is kept occluded with sterile cotton; *no attempt is to be made to irrigate it.*

X-rays should usually be delayed until the patient has recovered consciousness.

The need for a neurosurgeon is in the occasional case of intracranial hemorrhage, which usually shows deepening coma, dilated pupil on the side of the hemorrhage, with a contralateral paralysis, or increased deep reflexes, with a Babinski sign on that side. Spinal puncture reveals increased spinal fluid pressure, with very few blood elements in the fluid. Increasing drowsiness or coma is the most important sign.

Subdural hemorrhage is usually venous. The acute form is fresh blood usually discovered when skull is opened because of other brain injury. A chronic subdural hematoma is from continued venous leakage into the subdural space, blood then becoming organized.

Spinal puncture, if done (and it should not be done in the face of choked discs), would reveal some blood elements in the spinal fluid with markedly increased spinal fluid pressure. No cerebrospinal fluid should be removed if the pressure is found to be high.

Traumatic intracerebral hemorrhage occurs when any vessel in the substance of the brain is torn or

injured by trauma. This may cause a localized collection of blood under the cortex and gives the exact picture of an extradural or a subdural hematoma.

The general practitioner should care for the head injury unless signs or symptoms of increasing intracranial pressure arise. When these symptoms arise a surgical specialist in this field should be consulted without delay.

#### CALCIFICATION IN PULMONARY LESIONS AND SENSITIVITY TO HISTOPLASMIN

(M. L. Furcolow, in *Pub. Health Reports*, Nov. 4th, 1949)

In the past few years, evidence has accumulated which suggests that histoplasmosis, formerly believed to be a rare and usually fatal disease, is very prevalent in a mild form, without symptoms, in certain parts of the world. The principal significance of the asymptomatic form is that in certain respects the disease so closely resembles tuberculosis as to be frequently confused with it.

In the two diseases there are pulmonary calcifications which are so alike in appearance as to be indistinguishable except that some occur in persons who are hypersensitive to tuberculin and others in those hypersensitive to histoplasmin.

Seventeen children, ages 4 to 15, with calcified lesions have been selected for presentation. All were asymptomatic at the time of the survey and throughout the period of observation; none gave history of any illness which could be related to the development of the findings.

In addition to skin tests and chest films at regular intervals in all cases, periodic serological studies and search for the etiological agent were made.

In the entire original group of several hundred children with infiltrates which has been studied, there was no evidence of new lesions appearing, nor was there progression of the initial lesion.

Infiltrates of multiple lesions scattered in both lung fields, were millet-seed in size, or a few mm. to large conglomerate patchy areas. Marked enlargement of the hilar nodes was frequently associated. In the miliary type of lesions the picture was that once thought to represent healed miliary tuberculosis.

All the children were tuberculin-negative and histoplasmin-positive throughout the observation period.

## SURGERY

WILLIAM H. PRIGLEAU, M.D., *Editor*, Charleston, S. C.

#### VITALLIUM PLATES IN REPAIR OF HERNIAS

THE OPERATIVE REPAIR of hernias offers a rich field for the ingenuity of the surgeon. Various technics have been devised to meet different problems. Fascial and dermal grafts, and tantalum wire mesh have been used successfully to compensate for the weakness and loss of tissues.

A more recent development is the use of a Vitallium plate. This metal has been selected because it is relatively non-irritating to the tissues. Its use is based upon a different mechanical principle from that of fascial grafts and tantalum mesh. In explaining it, the authors, McNealy and Glassman,<sup>1</sup>

<sup>1</sup> J. McNealy, R. W., and Glassman, J. A.: *Surgery*, 27:752 (1950).



use the homely analogy of a rigid boot used to protect the inner tube adjacent to a hole in the tire casing. A flexible substance would be pushed through the hole, whereas the rigid boot would derive support from the good casing around the hole.

In the case of a defect in the abdominal wall, a fascial or wire mesh covering would derive its support only from sutures at the periphery. In some cases this would be inadequate. A metal plate obturator would be firmly supported by the sound tissues upon which it rested. There would be minimal pull on the sutures used to hold it in place.

The plates are designed for the particular site, and provided with holes in the periphery for fixation sutures. They have been used successfully in a number of cases. From the article it is not clear whether these plates are on the market.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### SUPRAPUBIC PROSTATECTOMY WITH PRIMARY CLOSURE OF THE BLADDER

ONCE in a while it is in order to state the present attitude of urologists as to which prostates should be removed by transurethral operation and how the remainder should be attacked.

Losh<sup>1</sup> states the case for the great majority of cases.

After the age of 50, 30 per cent of men have a prostate so large as to produce symptoms.

We resect 80-85 per cent of all types of prostates. All of the large glands are operated on by the suprapubic method. If the gland can not be resected at one sitting, it should be removed suprapubically. The surgeon should be temperamentally fitted and properly trained to perform a transurethral resection correctly.

Five years ago we decided to do our suprapubic prostatectomies in one stage with primary closure of the bladder. This has proved so successful that we pass the revised technique on for the general good. Any good surgeon can do this operation keeping in mind the larger the gland the easier the enucleation.

The bladder is inflated with air, a transverse incision made one in. above the pubes through the skin and fascia, and the fascia undermined above and below. The rectus muscle is split and the peritoneum is deflected upward. The prevesical space is packed with gauze and the bladder is opened transversely as wide as necessary. With the aid of retractors the bladder and prostate are inspected. With one finger in the rectum the prostate is enucleated with the other hand. After all tags around the vesical neck are trimmed, the prostatic bed is packed with strips of Oxycel gauze, each fastened

with a ligature so they can be easily removed; the strips should be left in place for eight minutes. While waiting for the Oxycel's hemostatic effect, a 90 c.c. round bag, and a 3-way Foley catheter with a long tip are passed down to the Oxycel pack. When the pack is removed the catheter will follow into the bladder. Remove all clots from the bladder and irrigate the catheter to free from clots. Irrigate the bag with 10 c.c. sodium citrate solution and pull it into the prostatic fossa. Then add as much sodium citrate solution as is necessary to fill the prostatic bed snugly. Again wash all clots from the bladder and irrigate catheter with sodium citrate solution. Place a Penrose drain in the prevesical space, and close the bladder with two rows of continuous 00 chromic catgut—the first row through the bladder muscularis, being careful not to incorporate the mucosa, the second row through the serous coat of the bladder. One No. 1 chromic suture is then placed through the bladder wall and rectus muscle. In case of hemorrhage the bladder can be opened easily. We have never found this necessary. The fascia and subcutaneous tissue are closed with interrupted No. 1 chromic. The skin is closed with clips. Irrigate the catheter until return is clear.

The patient is put back to bed and the catheter is attached to an intermittent irrigation of sterile water, a bottle of sodium citrate is attached and allowed to drip at the rate of 15 drops per minute—this to prevent clot formation. A transfusion of whole blood is given followed by 1000 c.c. of 5% glucose and 5% alcohol, 50 drops per minute; this will keep patient quiet, requiring less narcotic medication and so obviate postoperative ileus.

The patient is up in a chair the next day. The Foley catheter is left in place until the urine is clear; then it is replaced by a straight indwelling catheter which is not removed until the suprapubic incision is healed, usually the seventh day. The Penrose drain is removed the third day. The average hospital stay is 10 days. The mortality rate has been no higher than that of our transurethral prostatectomies.

Early diagnosis of prostatic hypertrophy is essential to prevent upper urinary and cardiac complications.

Rectal and panendoscopic examination or cystourethrograms will determine diagnosis of the type, location and extent of obstruction—information so necessary before surgery.

Transurethral prostatectomy can be performed in all types of prostatic hypertrophy if the surgeon has had proper training in operative technique and pre- and post-operative care. Suprapubic enucleation with primary closure of the bladder is not difficult and should be performed on all large glands.

<sup>1</sup> C. W. Losh, Des Moines, in *Miss. Val. Med. J.*, July.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### PARANOID REACTIONS IN THE AGING

THE MENTAL aberrations of those past the prime of life give much concern and require much attention. Two New Yorkers<sup>1</sup> contribute an article of unusual helpfulness.

In the aging the two commonest defense mechanisms are depressive states and paranoid reactions. Such mechanisms afford the persons in whom they develop a certain compensation and often appear to prevent further personality disintegration. They serve as a means for objectifying aggression. In depressive states the aggression is turned inward on the person depressed, in the paranoid reactions outward toward others.

Old people may have severe depressive reactions when they suddenly find themselves in an improved but more exacting environment which interferes with their former conditioned adjustment of years' standing and necessitates new adoptive responses. The best therapy in such a situation is to allow them to return to the old environment.

The paranoid reactions are variable in degree and may be associated with any type of personality disorder of those advanced in years. These reactions are not applicable to younger persons. They are to be differentiated from paranoia, a disease of insidious course, unfavorable prospects of recovery, a systematized delusion.

In paranoid reactions, like depressive states, there is no intellectual impairment unless the result of the organic deterioration. Persons so afflicted may believe others are accusing them of a perverse sexual or a social nature, which their religious, school, or social training makes them ashamed to accept within themselves, or they believe they are being persecuted because they are illustrious personages and therefore others are envious of them. Thus delusions of power and grandeur may be superimposed upon delusions of persecution.

In persons under 60, paranoid symptoms may be present in organic psychoses due to toxoid infection reactions, brain trauma, or brain tumor. In the older age group these symptoms are more frequently due to the organic psychoses of cerebral arteriosclerosis or senile dementia.

Paranoid delusional symptoms are in many cases the first evidence of organic brain pathology. The patient may have delusions long before they are apparent to others; even take court action on the basis of his delusions of persecution. Sometimes such action is directed toward members of his family who recognize the necessity for treatment and

1. E. B. Allen and H. E. Clow, New York, in *Geriatrics*, Mar.-Apr.

seek his admission to a mental hospital. Wills may be changed because of delusional beliefs of the patient which may subsequently, with justification, be contested by the original beneficiary.

### PHYSICAL MEDICINE IN SOME OLDER PATIENTS

SOME practical points from an article by Watkins,<sup>1</sup> affording aid in treatment of elderly patients:

Analgesic drugs, particularly salicylates, enhance the effect of physical therapy and frequently make possible more rapid return of function.

In the use of physical agents, heat in one form or another is prescribed almost routinely. In general *inexpensive methods which can be used in the home are adequate*, if detailed instructions are given, method of application, duration of the treatment, and frequency.

Following heat, massage is sedative for relief of muscle spasm; avoid the areas directly over the joints.

The most important part of the treatment is therapeutic exercise for stretching of tight structures and for strengthening the musculature.

Acute periods of severe pain require bed rest for short periods, avoid all unnecessary weight-bearing. Resistance exercises are to be carried out, gradually increasing the resistance.

Of patients who have simple recurrent backaches, many are women who rely upon the use of some corset or brace, and are found to have poor strength of abdominal and back musculature. Treatment again employs progressive resistance exercises. The two fundamental exercises for this group of patients are forward flexion to strengthen the abdominal muscles and backwards extension to improve the erector spinae groups. Best results are obtained after three months of such exercises, which may be done at home and many patients will take the time to set up the apparatus and to do the daily exercises.

In facial paralysis testing for electric excitability is to be done seven to 10 days after onset; if normal an early return of function is assured. If diminished response to faradic current and altered galvanic response, some residual defect may persist. If loss of faradic and slow hyperirritable galvanic response, a delay of two to three months may be expected before initial voluntary movement can be obtained; return to normal never observed. Permanent paralysis may be expected in not more than 4 per cent.

It is always pleasing to read after a doctor who has the sense to know that cheap methods are in many cases better, in practically all cases as good, as expensive methods; and who has the courage to proclaim this fact.

1. A. L. Watkins, Boston, in *Med. An. D. C.*, May.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### DELAY IN THE SECOND STAGE OF LABOUR

DELAY in labor's second stage is the great time-consumer of obstetrical practice. Jeffcoate<sup>1</sup> contributes an article of the greatest practicality and helpfulness to the general practitioner. The article clearly and strongly presents the cause for the great majority of deliveries being done in the home and by the non-specialist.

When the mother has systemic disease, or when the foetus is small and feeble, a second stage measured in minutes may be all either can withstand, whereas in a young healthy woman with a well-developed child labor may continue for several hours without either suffering harm. In the latter case there is everything to be said for conservatism while the presenting part is in the mid-pelvis, but when it is arrested at the outlet it is wrong to delay giving assistance. A timely episiotomy or simple low-forceps delivery presents, rather than causes, permanent soft-tissue damage to the mother, and minimizes the chances of foetal injury and asphyxia. Foetal distress and failing uterine action should be anticipated if possible. In deciding whether and when to intervene the practitioner must take into consideration his own ability and the conditions under which he is working, recognizing that the more deficient these are the more urgent must be the indication for meddling with Nature.

There should be no attempt at operative delivery unless: (a) the cervix is fully dilated, (b) the presenting part is below the level of the ischial spines and preferably is visible at the introitus, (c) a catheter has been passed, and (d) the operator is confident that he can effect delivery without using undue force or causing injury to mother or child.

If difficulty is envisaged the patient should be transferred to hospital, or a consultant called—depending on the circumstances.

If forceps delivery or other operation should prove more difficult than anticipated it is better to desist at once than to continue with more strenuous efforts or resort to heroic but dangerous manoeuvres such as internal version or craniotomy.

It is not enough to protect the mother—it is equally important to safeguard the life and health of the child.

The safe and easy performance of the above operations depends to a large extent on anaesthesia. The stomach empties slowly during labour, and

the induction of inhalation anaesthesia in a woman embarrassed by a large abdominal tumor, and unprepared, involves considerable risk of vomiting and inhalation asphyxia or pneumonia. Long labour also often means starvation, which leaves the liver very vulnerable to chloroform. Ether and chloroform inhibit uterine action and increase the risk of third-stage and postpartum haemorrhage.

Provided the patient has received liberal amounts of glucose during labour, light chloroform anaesthesia has much to commend it for easy low-forceps delivery in home practice. Intravenous sodium thiopentone is also appropriate. Inhalation anaesthesia should be kept at the lightest possible plane at the time of actual delivery and should *not* be continued during the repair of an episiotomy or perineal tear. Difficulty with the third stage should be expected and anticipated, and if it occurs there is much to be said for immediate manual removal of the placenta followed by the intravenous administration of 0.5 mg. of ergometrine.

Local analgesia avoids all the above risks, and with a patient who is reasonably coöperative is the ideal for the simple type of operations carried out in the home. For episiotomy and its subsequent repair, all that is necessary is to infiltrate the line of the incision with 0.5 or 1% procaine solution. For low-forceps delivery the main essential is to block the pudendal nerve.

A wheal is raised at the point midway between the anus and the ischial tuberosity on one side. The adjacent tissues, and the line of a proposed episiotomy incision, are infiltrated. With the finger in the vagina (some prefer the rectum in order to ensure that the bowel is not punctured) the ischial spine is identified and a long needle is guided from the original wheal up to the spine; 10 ml. of procaine solution is injected around the spine and in the area between it and the inner aspect of the tuberosity. The needle is then redirected parallel to the lateral wall of the vagina, and the levator ani muscle, and the fascia above and below it, are infiltrated. Finally the needle is passed forwards subcutaneously through the labium majus towards the mons, and solution injected along its tract. The opposite side is then treated in like manner.

The total procaine solution used need never exceed 100 ml. of 0.5% and half this amount is usually sufficient. If the pudendal nerve is properly blocked the superficial tissues require very little attention. Gentle operating is essential to success. With general anaesthesia it is wrong to await each uterine contraction before exerting traction with forceps; when operating under local analgesia it is imperative that, as the woman bears down, a smooth pull be made in the direction taken by the handles of the forceps at that time.

1. T. N. A. Jeffcoate, in *British Med. J.*, June 10th.



## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### INSULIN AND INSULIN MIXTURES

DURING the past 2½ years Peters<sup>1</sup> has used contemporaneously prepared mixtures of regular insulin and protamine zinc insulin. These mixtures have permitted more highly individualized control of diabetes, as each patient could be controlled by a mixture made to his individual requirements. The most useful mixture appeared to be that made from two parts regular insulin (or a little more) to one part p.z.i. The required range of ratio of mixtures was between one part regular to one part of p.z., and three parts regular to one part p.z.

The action of the insulin mixture begins within an hour; a peak is reached in six to eight hours, and its action is completed in 48 hours. Most patients prefer the use of mixtures because the number of injections is reduced by one or more. When using mixtures the dosage of regular insulin was adjusted by urine studies during the day. The fasting blood sugar served as a guide for the dose of p.z. insulin in the mixture.

In prescribing any insulin one should also prescribe the approved standard syringes to match the strength or insulin used. The syringe with green markings should be used for U80, the one with red marks for U40.

1. B. J. Peters, Milwaukee, in *Wisc. Med. J.*, June.

### FOCAL INFECTION IN THE ETIOLOGY OF DISEASE

THIRTY years ago, in a general conversation, the subject of focal infection was broached by a young doctor fresh from a medical center thoroughly committed to the importance of focal infection as a cause of disease in remote areas of the anatomy, and of general diseases as well. A bright young girl cousin contributed this: "We know about that. A man down the road a bit had been put in his buggy to go to see a doctor about his crippling arthritis; the horse ran away, the man was thrown out and one of his teeth knocked out; he jumped up, caught his runaway horse, turned around and drove on back home."

And that is no great exaggeration of the faith a lot of doctors had in the focal infection theory for a decade or so.

It seems timely to learn to what degree this mighty concept has shrunk. An article by Kolmer<sup>1</sup>—no one better qualified by experience and temperament—supplies this information.

Modern interest in focal infection in the etiology of disease began in 1910 when Hunter, a dentist, called attention to infections arising from ill-fitting

1. J. A. Kolmer, Philadelphia, in *Jl. National Med. Assn.*, Jan.

dentures and crowns, this followed in 1912, by the report of Billings, a physician, on focal infection in relation to arthritis and nephritis. Since then few subjects in medicine and dentistry have become more controversial.

It is reasonable to assume that such general conditions as anemia, anorexia and fatigability, may result from the production and absorption of exogenous or endogenous bacterial toxins in the primary foci of infection. Whether or not they can produce such secondary diseases as iritis, arthritis and fibrositis cannot be stated, although the possibility is to be admitted in at least those cases showing prompt and sometimes dramatic recovery following the extirpation or drainage of primary foci. On the other hand, if the absorption of these toxins is prevented by chronic inflammatory changes or encapsulation of the primary foci or, if upon absorption they are effectively neutralized by natural or acquired antitoxins, ill health is not to be expected.

It is much more likely that the diseases of focal infection may be due to infections with the organisms in the primary foci, through direct lymphatic extension or by way of the blood. That bacteremia is of frequent occurrence in suppurative gingivitis is now well established and especially following the extraction of teeth. Such transient bacteremia has been observed in 12 of 110 cases of pyorrhea before extraction, and in 72 of 110 cases after extraction. Reports have been made of incidence of 32 per cent following tonsillectomy; positive blood cultures in 8.5 per cent immediately following tonsillectomy, and in 26.3 per cent within five minutes after operation. A series of chronic tonsillitis gave negative blood cultures in all immediately before, positive in 12.5 per cent within 10 min. after operation. In a series of cases of chronic prostatitis cultures were negative immediately before prostate massage, positive in 11 per cent within five to 10 minutes after this procedure. In one-half to six hours the invading organisms are removed from the blood by phagocytosis.

In so grave a disease as subacute bacterial endocarditis, foci should never be disturbed until the patient is fully protected by adequate penicillin therapy, and, in the case of infected teeth, even then only one or two should be extracted at a time.

Kolmer is in favor of extirpating or draining foci of infection whenever possible, always being careful to explain to patients that this may do no more than some possible improvement in general health along with the possibility of retarding or preventing progression of the disease. In most instances one should endeavor to culture the organism or organisms in the primary focus for preparing an autogenous vaccine, if the patient is willing to take injections at weekly intervals in cautious



and gradually increasing doses, over four to six months or longer periods.

One ground for the closest coöperation between the medical and dental professions is prompt extirpation or drainage of accessible primary foci. Particularly is this true in relation to subacute bacterial endocarditis. All cases of rheumatic, hypertensive and other types of valvular and congenital heart disease should receive periodical dental care and the dentists concerned should be informed of the existence of these types of heart disease in their patients. Dentists should realize special responsibility in these cases for keeping the oral cavity as free of infection as possible. If in doubt, it is far better to extract a tooth, or teeth, than to take chances on some grave disease of focal infection. When patients with valvular or congenital heart disease require the extraction of two or more infected teeth, not more than one or two teeth should be taken out at one sitting. Intramuscular injection of 300,000 units of penicillin in peanut oil and beeswax or 100,000 units in aqueous solution is in order, two hours before extraction.

#### APPENDICEAL DISEASE

(G. N. Weiss, New Orleans, in *New Orleans Med. & Surg. J.*, May)

The incidence of hospital admissions to Touro Infirmary for appendiceal disease was 7.5% of 190,487 admissions in the 15-year period, 1934-1948.

The mortality for appendiceal disease has fallen by two-thirds with an average fatality rate in 3,374 cases of 0.7%.

In the series of 3,599 cases of acute appendicitis the death rate was 1.9%.

One in 250 patients died of acute appendicitis without complication.

One in 30 patients died of acute appendicitis with gangrene.

One in 15 patients died of acute appendicitis with abscess.

One in six patients died of acute appendicitis with perforation.

In the series of 9,587 cases of chronic appendicitis, both recurrent and those removed incidental to other surgical procedures, one in 430 patients died.

Although earlier more accurate diagnosis and treatment are being instituted in appendicitis, mortality is still due in great part to procrastination and purgation.

#### CARCINOMA OF THE STOMACH

(H. C. Edwards, London, in *British Med. J.*, April 29th)

By the time the radiologist is in a position to say that an ulcer of the lesser curve or pre-pyloric region is malignant beyond doubt, the growth has passed the stage in which there is probability of cure.

Another cause for delay is the "therapeutic test," which is completely fallacious. It is to be expected that the symptoms of cancer may be considerably relieved by diet and rest. The patient may even put on weight, and an ulcer crater be shown radiologically to shrink in size. The reason may be that, once the growth has reached the mucosa, peptic ulceration begins, and will progress more quickly than ulceration due to the growth itself. It may also respond to

medical treatment, with both clinical and radiological improvement.

Gastroscopy may be invaluable, though it is not consistently reliable, and negative findings are not conclusive. The importance of blood examinations lies in the fact that the presence of an otherwise unexplained anaemia should lead to an investigation of the stomach as being a possible site of its cause. Absence of free HCl is in favour of a diagnosis of cancer, but its presence is not evidence against cancer.

The smear technique of cytological diagnosis offers great possibilities.

Laparotomy must be resorted to when other avenues of inquiry have failed to reveal the cause of the symptoms. "Scientific and deadly delay (Mayo) often throws away the opportunity of radical and successful operation."

Ulcers in the pyloric antrum ought *always* to be regarded as actually or potentially malignant, and should be operated on. It is impossible at an early stage to distinguish between simple and malignant ulcers developing in this situation.

In arriving at a diagnosis the history outweighs in significance all other methods, including x-ray films. If the history is suggestive, laparotomy should be enjoined despite the fact that other investigations have yielded negative or equivocal results.

#### NOCTURNAL ENURESIS

(J. R. Davidson & Ernest Douglas, in *British Med. J.*, June 10th)

The problem of enuresis is of such great importance as to justify prompt passing on of all reports of better treatment. We therefore decided to try the method devised by Mower, using the device which wakens the child as soon as the act of micturition begins.

We have treated 20 cases; 15 are now dry and five greatly improved. It is strange that this work and its claim have scant recognition.

The original apparatus consisted of two layers of bronze gauze 24 x 18 in. separated by a piece of cotton material on which the child slept, the edges being carefully bound with cloth and the whole quilted together. One wire from each layer of gauze is led by means of a plug connector to the bell-box. As soon as current passes across the pad, the relay closes the two contacts, one ringing the bell and the other causing the relay circuit to remain closed until the push-button releases it.

We now use an improved pad, consisting of two bare nickel wires (24 S. W. G.)  $\frac{1}{2}$  in. apart, stitched in a circular pattern to a rubber sheet 24 x 18 in. The pad is placed on the bed under or on the sheet with a small draw-sheet to cover it. A rubber mat may be put underneath on the mattress for additional protection; the bed should be firm.

The method should be explained to the child and care taken to show how it works; he should also be made to work it experimentally once or twice. He is then told that as soon as the bell rings he will get up, pull out the plug, press the button, and go to the toilet and empty his bladder. It is important to stress continually that he must get up as soon as the bell rings.

Two pads of the original design were allotted to each case, with the instruction to remove the wet one after coming back from the toilet, insert the dry one, and plug it in. Thus if there was to be a second wetting in the same night the bell would ring again. The new pad is merely wiped dry and used again.

All the children kept a record card, which we believe is in itself of therapeutic value. The only reward offered was a dry bed.

## PRESIDENT'S PAGE

## WRITE WHAT THOU HAST SEEN

IN his Revelations, with which the Holy Scriptures are concluded, Saint John admonished his colleagues with this bit of philosophy, "Write what thou hast seen."

It is your President's conviction that if our predecessors had all taken the time to write what they had seen, medical facts would have accumulated to such a degree as to now constitute a far greater revelation of medical knowledge. One cannot see without passing through an experience of contact. Constant and observing contact perfects the art of a profession in such a way as to reduce the making of mistakes, in far greater ratio than is possible through the best research. These inherent characteristics of mankind change but little as the years go by.

As members of the Tri-State Medical Association, let us take to heart the philosophy handed down to us from one so wise, so sympathetic and so human. When one becomes a member of this body of doctors he comes into intimate association with those who believe in writing what they have seen, and he is encouraged to follow in the footsteps of leaders of his profession. His membership should mean to him a great opportunity to prepare and read papers before this, as well as other organizations of doctors. One should not be deterred from presenting his experiences because they were of diagnosis and treatment in a log cabin or in a tenement house instead of the ward of a large hospital.

Most people experience at least the first few days of illness in their homes and it is here that the observation of illness is most important to patient and doctor, because there is where the doctor should obtain knowledge of the *disease* and the *patient* at the time treatment is most effective.

It is all too easy for us to be subject to an inferiority complex when thinking about reporting cases. The thought is prone to run something like this: This happened to Bill Jones' wife at Great Bridge. Perhaps it would not happen in the hospitals of the great cities, and who would believe my observations worth anything, since I am not connected with any medical school, large hospital or research department. To offset this feeling, let me urge you to consider that a *pound of shot* and a *pound of feathers* weigh the same whether it be at a cross-roads store or in the largest department store in New York City. *Forget who you are, but write what you have seen*, and write it accurately, so that other doctors may read and understand, and be encouraged to write what *they* have seen.

It is my sincere hope that the membership of the Tri-State Medical Association may become better and better known in the medical world for their determination to write what they have seen.

*The art of medicine changes only as human individuals, their aspirations and desires, change.*

—R. B. Davis

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*As is true of most Medical Journals, all costs of cuts, must be borne by the author.*

APPLICATIONS FOR PLACE ON TRI-STATE PROGRAM  
IN ORDER

ALTHOUGH the next meeting of the Tri-State Medical Association of the Carolinas and Virginia is more than half-a-year off, the builders of the program request that members desirous of contributing to the program make known their desires now.

It has always been the practice of this Association to build the programs largely from contributions of its own members, supplementing with essays or clinics by one to three distinguished invited guests who had recently done some notable work on a specially important medical or surgical disease condition. It was the belief of the founders that Tri-State members were competent and willing to teach one another, and this belief has been amply justified over the half-century of the Association's existence in high and useful endeavor.

Many applications have come in to Chairman Wallace of the Program Committee, directly and through other officers of the Association. Those of you who have something special to say for the good of the order, and for the good of those who look to members of the order for health care, write Dr. William R. Wallace, Chester, S. C.

ELABORATION—THE TOO-MUCH AND THE  
TOO-EXPENSIVE—IN MEDICINE

A CERTAIN Bishop of London said, "Few do more harm than those who go about doing good." We all ought to know that too much of a good thing is a bad thing. That, to my mind, is a serious mistake in modern medicine. This unorthodox, but none the less highly intelligent, statement, introductory to the address of the president of a State Medical Society, arrested my attention and gained my favor for what was to follow.

This full-headed and hard-headed New Englander went on:

I am going to emphasize one aspect, the financial. I am a reactionary. The principal plea for bureaucratic control of medicine seems to be that the increasing cost of medicine is more than we can handle and we will have to let the government pay the bills. You are rapidly forcing this result by your extravagant ways.

A constant stream of literature flows into our offices from the big companies supplying the tools of our trade. The major part of this is never read. Much of it is of the highest quality, illustrated by good artists and written by able men. The cost is enormous. All of this must be paid as a part of



the high cost of medical care. Even worse is its effect on the profession. You are using the vitamins, the hormones, the latest and most expensive antibiotics in enormous amounts long before they have scientifically proven their worth.

With good judgment a physician can handle a large proportion of his cases with a minimum of expensive investigation. There are too many laboratory investigations. I am astounded at the number of such procedures done on the usual case presented before medical grand rounds. The expense frequently must run into hundreds of dollars. Our internes and residents get exalted ideas of what constitutes a reasonable amount of investigation. When I send a private patient into the hospital, I am usually disturbed at the carefree way in which his pocketbook is treated.

Few hospital patients with really serious disease now escape the use of vitamins, hormones, large amounts of intravenous fluids, and enormous amounts of the latest and most expensive antibiotics. The most thorough study of vitamins so far does not support at all the use of them now prevalent. The use of hormones is at present far, far ahead of their proven value. A pioneer in the study of body fluids has deplored to me the overuse of intravenous fluids. One of our own men now doing brilliant work on the use of antibiotics says they are being used in excessive amounts at unnecessarily large costs.

Antibiotics are being used without discrimination. One of our best known practitioners told me that he had a case of influenza and at the suggestion of another able man, he ordered chloromycetin for the patient. A few days later she pushed a bill into his hands and said, "Here, you can pay this yourself." The amount was \$30.

We are getting reports now of penicillin-resistant strains of gonococci, of the serious growth of monilia and other fungi, of adverse effects on patients, following the use of penicillin, streptomycin, and aureomycin. All this suggests caution in the use of these valuable agents.

Dr. Oliver Wendell Holmes said homeopathy did good because it put a check on the tremendous overdosing by regular physicians. Now if overdosing with those impotent drugs was bad, how much worse it is today with our modern, powerful agents capable of great good, and equally great harm!

A specialist should be a counselor in all matters relating to his subject and ready to handle the difficult cases. The general practitioner should take care of most sick children as well as sick adults, and always know that he has ready to help him, highly trained men.

All these things *Southern Medicine & Surgery* has iterated and reiterated for 25 years. It is encouraging to learn that the president of this State

Medical Society, who also is editor of that society's medical journal, entertains and promulgates these views. We and the few like-minded can take comfort from the counsel, "Fear not little flock."

But I can not go along with President-Editor Chase in his advocacy of Voluntary Health Insurance. When this insurance plan was being initiated in North Carolina, nearly 20 years ago, I participated in the discussion. My objections then were (1) that insured persons in large number would demand hospitalization for illnesses for which they, uninsured, would not think of a hospital; (2) that "hospitalization at cost" takes no account of the inescapable overhead expense of some 20 per cent. These two factors being taken into account, the dollar you pay can buy little more than 50 cents worth of insurance.

"Facts are stubborn things." Witness the following message:

BLUE CROSS-BLUE SHIELD  
PLAN-O-GRAM

June 28.

ALL NORTH CAROLINA PHYSICIANS

Admissions for "diagnosis only" are increasing at alarming rate; also admissions for causes too minor to be real hospital cases are increasing all out of proportion to really ill bed patient cases. Situation serious for us. We need your help to prevent such misuse of Blue-Cross-Blue Shield. Please insert "For diagnosis" on our notice of admission. Hospital will collect from patient and we will also explain to patient he did not buy this type of coverage. . . .

If such a voluntary plan functions, the people, physicians and hospitals must share in the responsibility. Otherwise premiums cannot be kept at a figure where public can afford to purchase this voluntary protection.

HOSPITAL SAVINGS ASSOCIATION OF NORTH  
CAROLINA, INC.

E. MC G. HEDGPETH, M.D., MEDICAL DIRECTOR.

As to the need for insurance against expense of ordinary, or even "calamitous," illness: In the more than 40 years I have been a doctor of medicine, I have never known a person to lack for medical, surgical, or hospital care, because of inability to pay for it. I have heard about such cases, just as I have heard about ghosts; but none of the stories would stand up under investigation.

For years I have, annually, shown from State Boards of Health figures, that, in Virginia and North and South Carolina, the death rate in the *counties not having hospitals* is lower than the death rate in *counties having hospitals*, and this despite the fact that the population of rural counties is more largely made up of the elderly, and in these rural counties the birth rate is higher, and as stated in the 1948 Report on Vital Statistics of Massachusetts, "a community where the very old or very young predominate will show a higher rate than a community made up largely of young adults."

Reports the country over show that the States having most hospital beds per 100,000 population

do not have the lowest mortality rate per 100,000.

Some months ago I was moved to write for the Massachusetts figures. Those for 1948 (the latest complete) show death rate:

For the whole State 11.3.  
For the City of Boston 13.0.

In the face of all these facts apparently 9.99 per cent of us, doctors included, believe and proclaim: (1) that the city folks are getting entirely adequate medical care; (2) that the rural folks are getting disgracefully inadequate medical care; and (3) that building a big new hospital in every rural county will change this "disgracefully inadequate" medical care to the "entirely adequate" medical care enjoyed by the city folks.

"O, Judgment, thou art filed to brutish beasts, and men have lost their reasons."

What is the meaning of adequacy?

By what fruits do the ninety-and-nine judge of the adequacy of medical care?

What process of reasoning have the ninety-and-nine followed to arrive at their sublime faith in the magical powers of bricks, mortar, lumber, metals and glass, put together and called a hospital, to restore one to health?

Hospitals are blessed essentials for the care of persons in need of major surgery, for most of the truly insane, and for a few others. The place for the vast majority to be born, and to spend the vast majority of their periods of illness, and to die, is in their own beds.

And that's the way and manner by which *all* can get adequate medical care at a reasonable cost; and then both the clamors—that for socialized medicine and that for hospital insurance—will subside to faint whispers.

And the city folks will get as adequate medical care as the country folks, at a good 50 per cent discount on the present cost.

### NOT ANOTHER TAX-PAYER'S DOLLAR TO BRITAIN UNDER ITS PRESENT GOVERNMENT

IN A DISCUSSION of Diabetes, a feature of a Refresher Course for General Practitioners, Wilfred Oakley, M.D., F.R.C.P., Physician to King's College Hospital, London, said these words: "In diabetic coma patients should be admitted to hospital as quickly as possible, put into a warm bed and kept warm with an electric blanket."<sup>1</sup>

Having never heard of an electric blanket as anything other than a luxury item, made for folks with more money than sense, this bold statement that every patient in diabetic coma should be kept warm with an electric blanket—one must assume that electric blankets are standard hospital equipment in Britain—excited my keen interest.

1. *British Medical Journal*, Dec. 17.

Inquiries of Charlotte's (pop. 150,000) large surgical supply house and of our three large amply-financed hospitals, brought replies that neither had even one electric blanket.

A few weeks later there came from the publishers a new book on Treatment. The section of this book on Diabetes is written by two doctors famous the world over for their knowledge of diabetes—one a member of the faculty of Harvard Medical School, the other a member of the Staff of the Mayo Clinic. There is no mention there of an electric blanket.

My mind reverted to newspaper accounts of the amounts of money paid to supply wigs, toupes, duplicate pairs of glasses and duplicate sets of teeth, and such like to Britishers.

Now, this would be none of our affair were we not paying for these luxury items, the purchase of which is not contemplated by hospitals or individuals in this country, paying their own bills.

I am not anti-British, I firmly believe that, but for the sustained courage and resourcefulness of the British, Hitler's flag would be flying over Washington at this moment; that Churchill spoke truth when he said, "Never has the world owed so much to so few."

Winston Churchill is the greatest statesman, the greatest soldier and the greater orator the world ever knew. Virginian that I am, I proclaim that, as compared with Winston Churchill's "We will never surrender," Patrick Henry's "Give me liberty or give me death" is mere Friday-afternoon, grammar-school stuff.

But, be it remembered, Britain, before the guns were cool, turned her back on Churchill, affording an unhappy confirmation of her own Lord Rosebery's acrid comment made long ago: "Gratitude is a lively appreciation of favors to come." And, only a few weeks since, the present Government of Britain refused to collaborate with five other western European nations in an enterprise every other Government believes to be of vast importance to economic recovery, and gave as one reason for refusal the fact that these five were not socialist governments. Yet, once-proud Britain begs hundreds of millions of charity from capitalist United States, and ever clamors for more!

The ostentatious wastefulness of the Duke and Duchess of Windsor is a stench in the nostrils of United States taxpayers—Her Grace traveling with a dozen trunks of Parisian creations and furs costing thousands upon thousands, and, according to a recent magazine story, each of the two being "good for a \$20,000 Pullman porter tip"—or would *gratuity or largess* be a more fitting words for such a sum?

For every \$10,000 the British Government takes off the income allowed this ex-royal liability, \$10.-

000 can be saved to the taxpayers of the United States from whose pockets comes the whole of it, directly or indirectly. How many of us are rich enough, or fools enough, to tip a porter \$20.00?

Nine-tenths of persons who do not wear glasses until past the 35th year are served just as well by a pair costing 50 cents at Woolworth's as by two pairs costing \$25.00 each—a total of \$50.00—(of our money) at the hands of a British oculist and a British optician.

We don't buy wigs and toupés and electric blankets for ourselves and our hospitals. Why should we buy them for Britishers?

These are but a few things we learned about quite by chance. Doubtless full inquiry into the matter would reveal such unconscionable waste of the millions Britain is begging from us, much of it in keeping the Socialist Government in power, as to cause such a protest from United States taxpayers as to cause the prompt cutting-off of gifts to these wasteful ingrates.

### "PARENTERAL" MEDICATION"

WHEN our ancient brethren coined the terms melancholia and malaria, and applied them to two disease conditions, their error was because of the inadequacy of the scientific knowledge of the day, not because of inexcusable ignorance of elementary grammar.

The Greek *melas* means black; *chole* means bile; and the doctors of ancient Greece thought the condition they denominated melancholia due to accumulation of black bile.

It seems that the commonest of the insect-borne diseases gave Europeans little trouble prior to the time the world became Roman, so, as this disease was attributed to bad air, we have malaria from the Latin *malum*, an evil; *acr* (It., *aria*) air.

The present-day reckless misuse of words by doctors is due to a combination of ignorance and carelessness.

Nobody ever accused Brooklyn of being a modern Athens, but an erudite Brooklyn editor writes<sup>1</sup> in timely protest against the ignorant pretentiousness of so much of the medical "literature" of today.

The name *parenteral* seems to have caught the fancy of the physicians. The adjective means "not intestinal, or, outside of the intestine." The physiologist uses the term aptly in describing digestion of food substances that occurs in the cells of the tissues rather than within the lumen of the intestine. When adopted to describe the avenue by which drugs or chemicals are to be administered, it becomes an entirely negative and inexact term interpretable to mean "not by mouth, not by gastric instillation, not through an intestinal stoma and not by rectum."

1. Editorial in *The Brooklyn Hospital J.* (3rd & 4th quarters), 1949.

If the author writes that "the medication was given parenterally," the reader can safely assume that he did not use any of the various means of introducing it directly into the alimentary tract. But he has not told whether he gave the drug by intradermal, subcutaneous, intramuscular, intravenous, intrathecal or some other *nonintestinal* route.

The matter is not one of fastidious terminology, but an important one of clarity and accuracy of expression. If one has something worth telling concerning medication, it is of little value to tell how it was *not* given; he should state clearly by what avenue it *was* given, including the dosage and the frequency of administration. Too often we hear or read of the "parenteral and intrathecal" administration of this or that agent, or the "topical and parenteral" use of an antibiotic, for example, in the treatment of wounds. Intrathecal and most topical sites *are* parenteral. *Parenteral* is a sound-word that impresses the uninformed as professional and learned, but it has little value in therapeutic terminology.

Read what Dr. Oliver Hazard Perry Pepper (no kin to the Florida lame-huck, I assure you) has to say on pp. 220-223 of this issue, along these lines. Read particularly about the horrible euponyms, and the inexcusably ignorant word, antibiotic.

CONGENITAL ATRESIA OF THE ESOPHAGUS.—A case is reported (*Brit. Med. J.*, Apr. 22), which was recognized only on the 5th day. This is said to be the 4th case reported of successful treatment by anastomosis.

WANT TO LOSE A POUND? WALK 70 MILES AT 3½ MILES

PER HOUR  
(President, Section of Medicine, *Proc. Royal Soc. Med.*  
(London), May)

The exercise necessary for the combustion of one pound of fat is that comprised in walking 70 miles at the sustained speed of 3½ miles an hour. The increased ingestion of food consequent on the appetite produced would more than counterbalance the loss of fat. As to really violent exercise, one would have to run at the rate of 10 miles an hour for 43.2 miles.

Loss of weight must be distinguished from loss of fat. The author, himself, once lost 3 lbs. in weight in a ½ hour's vigorous climbing in Switzerland, and he once observed a loss of 9 lbs. in a runner over a Marathon race of 26¼ miles in two-and-a-half hours. These losses were, of course, mainly water which was restored during the ensuing 48 hours.

SOME EARLY HERBALS  
(*British Med. J.*, June 10th)

The discovery of America led to the introduction of many vegetable remedies, and these were described by Monardes, of Seville. The English translation of his book, entitled *Joyfull Newes out of the Newe Founde World*, appeared in 1577, and contains the first picture of the tobacco plant in a printed book. Tobacco was recommended as a remedy for "wearinesse."

CONTROL OF WEIGHT GAIN, adequate protein intake and restricted sodium intake for all patients may greatly reduce the incidence of preëclampsia.—*Ill. Med. J.*, June.



## NEWS

### UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE

Dr. John Hamilton Allan, formerly of the School of Medicine of the University of Pennsylvania, has joined the faculty as Professor and Chairman of the School of Orthopedics.

Dr. Joseph F. A. McManus, formerly Associate Professor of Pathology at the Medical College of Alabama, has joined the faculty as Associate Professor of Pathology.

Dr. Morris Sullivan McKeehan, formerly of the Department of Zoology, University of Chicago, will become, on September 1st, Assistant Professor of Anatomy.

Dr. Paxton Stodder, formerly an intern in Medicine at the Massachusetts Memorial Hospital, has been appointed Instructor in Pharmacology.

The following have been appointed as Research Assistants in the School of Pharmacology: Henry E. Evert, Ph.D.; Desmond R. H. Gourley, Ph.D.; James G. Hilton, B.S.; Fred C. Holler, Ph.D.; and Myron J. Lover, B.A., M.S., Ph.D.

Dr. Thomas Warren has been appointed Instructor in Clinical Pathology.

The following former members of the resident staff of the University of Virginia Hospital have been appointed full-time instructors: Dr. Dwight Brown, Obstetrics and Gynecology; Dr. Samuel Hay, Internal Medicine; Dr. Robert Kelley, Urology; and Dr. Carey Moon, Otolaryngology.

The following promotions in the Faculty are announced:

Dr. William Norman Thornton, Jr., from Associate Professor to Professor and Chairman of the School of Obstetrics and Gynecology.

Dr. Oliver B. Bobbitt, from Instructor to Assistant Professor of Clinical Pathology.

The annual meeting of the University of Virginia Alumni Association was held on June 9th with an attendance of 150. Dr. Edward F. Bland, class of 1927, Associate in Medicine at Harvard Medical School and Physician to the Massachusetts General Hospital, gave the annual address by an alumnus. Other papers on the scientific program were presented by members of the Medical Faculty. President Colgate W. Darden, Jr., and Dr. Seale Harris, of Birmingham, Alabama, spoke at the dinner.

Dr. Dudley C. Smith, Professor of Dermatology and Syphilology, has been elected Chairman of the Section on Dermatology and Syphilology of the American Medical Association for 1950-1951.

Contracts have been let for erection of the unit for research and treatment in the field of cancer. Total estimated cost of the project is \$250,000.

THE SECOND DISTRICT (N. C.) MEDICAL SOCIETY was entertained by the Carteret County Medical Society at the Blue Ribbon Club, Morehead City, May 24th.

In the afternoon the visiting doctors and their wives toured Cherry Point Air Base. The feature of the night program was an address by Admiral F. C. Greaves, Washington, on "The Medical Aspects of Atomic Defense."

Officers for the coming year are Dr. John C. Tayloe, Washington, N. C., president; Dr. J. G. Ramsay, Washington, N. C., vice-president; Dr. E. W. Larkin, Washington, N. C., secretary and treasurer. The next meeting will be held in Washington, N. C.

The retiring president was Dr. S. W. Thompson, Morehead City.

*Dr. N. Thomas Ennett, M.D., Cor. Sec.*

THE CARTARET COUNTY MEDICAL SOCIETY held its regular monthly meeting June 12th. This was a dinner meeting, the Morehead City Hospital acting as host. The guest speaker was Dr. Reece Berryhill, Dean of the Medical School of the University of North Carolina. Dr. Berryhill gave an account of the progress in building and in engaging faculty personnel, and stated that it was probable that by September of next year the school would be on a four-year basis. The society was enthusiastic over the prospects of the school as presented by Dr. Berryhill.

Dr. S. W. Hatcher, president of the society, occupied the chair.

*Dr. N. Thomas Ennett, Cor. Sec.*

DR. GEORGE H. PETTEWAY announces the association of DR. HARVEY C. MAY in the practice of Gynecology and Obstetrics, 1524 Elizabeth Avenue, Charlotte, N. C.

DR. J. KEMPTON JONES, a native of Salisbury and a graduate of Duke University Medical School, has become associated in practice with Dr. Fred G. Patterson, of Chapel Hill.

### MARRIED

Miss Betty Cameron Goodwyn, of Richmond and Henderson, N. C., and Dr. Charles Council Parker, of Woodland, N. C., were married at noon July 12th at the Church of the Holy Innocents in Henderson.

After a Southern wedding trip, Dr. and Mrs. Parker will sail for Germany, where Dr. Parker will serve as captain in the United States Army.

Mrs. Parker is the daughter of Mr. and Mrs. William Stephen Goodwyn, of Henderson. Dr. Parker, son of Mr. and Mrs. Clifton Geno Parker, of Woodland, is a resident doctor at the Medical College of Virginia Hospital.

### DIED

Dr. Herman H. Hines, 42, M. C. V., Richmond, 1935, died at a hospital at Norton, Va., July 5th.

After four and one-half years in service, Dr. Hines began practicing at Pennington Gap, Lee County. He received a serious neck injury 18 months ago in an automobile accident, and had suffered two attacks of pneumonia in the last six months.

Dr. Arthur W. Deans, 63, Medical College of Virginia 1915, died suddenly at his home at Battleboro, N. C., July 1st. In addition to his large medical practice, Dr. Deans engaged in political and farming activities.

Dr. Charles Fuller Kincheloe, 43, orthopedic surgeon and former University of Virginia boxing star, died July 12th from heart disease.

Dr. Kincheloe competed for four years as a light-heavy-weight boxer on the University team. He was a tackle on the varsity football team for two years.

He maintained offices in Washington. His home was in Alexandria, Va.

Cortisone will be available early in July to a large number of hospitals throughout the United States under the trade mark "Cortone." It was announced recently by Merck & Co., Inc., manufacturing chemists, who first produced the drug by chemical synthesis. The drug is to be used, during the initial period of treatment, only in patients hospitalized in these institutions. This stipulation is considered essential for the present by the Food and Drug Administration, for safe use of the product.

## BOOKS

**THE PRACTICE OF MEDICINE**, by JONATHAN CAMPBELL MEAKINS, C.B.E., M.D., LL.D., D.Sc., Formerly Professor of Medicine and Director of the Department of Medicine, McGill University; Formerly Professor of Therapeutics and Clinical Medicine, University of Edinburgh. Fifth edition with 518 illustrations including 50 in color. *The C. V. Mosby Company*, 3207 Washington Boulevard, St. Louis 3, Mo. 1950. \$13.50.

The book is written with a realization that the requirements of medical practice are become so complicated as to make impossible the doing of most for the patient without access to good diagnostic and therapeutic facilities. But cognizance is taken of the fact that rapid transport and improved methods of preservation have brought these facilities within ready reach of every doctor. Further it is realized that the vast majority of human disabilities and disease conditions are of the ordinary variety, not requiring the most elaborate, and consequently the most expensive, diagnostic and therapeutic procedures. The enormously difficult task of comprising in one volume all the information needful for dealing with at least 95 per cent of medical conditions has been accomplished by confining the discussions to the essentials, and leaving out the superfluities which, while entertaining to (and incidentally already known to)

the medical scholar, are of no practical use in the accomplishment of most of good for the patient.

**PEPTIC ULCER**, by A. C. IVY, Ph.D., M.D., D.Sc., LL.D., Vice-President of the University of Illinois in Charge of Chicago Professional Colleges; Distinguished Professor of Physiology; Chairman of the Department of Clinical Science; M. I. GROSSMAN, Ph.D., M.D., Associate Professor of Physiology in the Department of Clinical Science, University of Illinois College of Medicine, and WILLIAM H. BACHRACH, Ph.D., M.D., Research Associate in Physiology, University of Southern California. *The Elakiston Company*, 1012 Walnut St., Philadelphia 5, Pa. 1950. \$14.00.

So far as is known to this reviewer this is the first book written primarily for clinical use by doctors who are primarily and mainly physiologists. As might have been assumed, the book is made up in much greater part of established facts than of more or less idle speculation.

Part I is devoted to an introduction to the problem of peptic ulcer, considering such basic topics as the resistance of the stomach and the first two parts of the small intestine.

Part II gives accounts of experimental, clinical and necropsy observations, bringing these to bear on the problem of pathogenesis. It is said that more is known on the cause of peptic ulcer than has been generally suspected and that the conditions essential for the development of such an ulcer can be stated with a fair amount of precision.



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In part III we may learn a good deal to the advantage of our patients and ourselves about means of making the definite diagnosis, and Part IV presents a summary of the effectiveness of the various means of treatment and undertakes to point out the ideal therapeutic goal of the future.

The reader will find the summary which concludes each chapter a particularly valuable feature.

The book is cordially recommended to every practitioner of medicine for its value in correcting his misinformation on the subject and for adding greatly to whatever solid information he may already have.

THE MERCK MANUAL OF DIAGNOSIS AND THERAPY: A Source of Ready Reference for the Physician. Eighth Edition. *Merck & Company, Inc.*, Rahway, New Jersey. 1950. \$4.50 reg. Thumb Index \$5.00.

The intention in putting out this manual has always been to supply the physician with accurate condensed up-to-date information. The essentials of diagnosis and treatment are first requisites, and where basic physiologic and pathologic facts are essential to understanding of therapy these are included. More than a hundred of the ablest clinicians all over the U. S. have contributed to the putting out of this edition. The new Golden Anniversary Eighth Edition of *The Merck Manual* is worthy of its predecessors and of those who put it out. It may well be doubted if there can be found anywhere a more satisfactory guide to daily medical practice.

The first printing of 75,000 copies has been exhausted by advance orders prior to the publication date of June 1. A second printing is now on the press and will be available July 30.

THE GENEALOGY OF GYNAECOLOGY: History of the Development of Gynaecology Throughout the Ages—1800 A. D.—with Excerpts from the Many Authors who have contributed to the various Phases of the Subject. JAMES V. RICCI, A.B., M.D., Clinical Professor of Gynaecology and Obstetrics, New York Medical College, etc. Second edition, enlarged and revised. *The Blakiston Company*, 1012 Walnut Street, Philadelphia 5, Pa. 1950. \$8.50.

The discussion of the gynaecology of the prehistoric age, with which the book begins, contains interesting speculation on earliest conditions and happenings in the Mediterranean area and in Western Asia. In Part II, "The Ancient Epoch," a chapter is devoted to Egyptian gynaecology, one to Babylonian-Assyrian gynaecology, one to gynaecology of the Hindus, and the fourth to gynaecology in Biblical literature.

Part III, "The Classic Age," covers the knowledge of the subject from the time of Hippocrates through the Graeco-Roman period, discussing the contributions of the school of medicine at Alexandria, Talmudic gynaecology, and the contributions of Aretaeos, of Rufos of Ephesos, of Soranos, and

of Galen. Gynaecological instruments of the Graeco-Roman period are given a special chapter.

The remaining four parts are devoted to the Byzantine, the Arabic, the Mediaeval, and the Transitional periods.

In the Epilogue are set forth the advantages to a practitioner of medicine in any of its phases of an intimate acquaintance with the great historical doctrines and the philosophies on which they are based.

CLINICAL USES OF INTRAVENOUS PROCAINE, by DAVID J. GRAUBARD, M.D., Assistant Visiting Surgeon, Cumberland Hospital; Assistant Visiting Orthopedist, Kingston Ave. Hospital, Brooklyn; and MILTON C. PETERSNO, M.D., Visiting Anesthesiologist, Research Hospital, Kansas City, Mo., etc. *Charles C. Thomas*, 301-327 E. Lawrence Ave., Springfield, Ill. 1950. \$2.25.

This little book is a reliable source of information on the chemistry and pharmacology of procaine hydrochloride, on intravenous local anesthesia, and on treatment by this method of pruritus, serum sickness and other sensitivities; and on its use for analgesia in burns and postoperative pain, for relief of arrhythmias during analgesia, and to meet a good many other indications, one among them being the alleviation of pain and spasm of poliomyelitis.

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JAMES M. NORTHINGTON, M.D., Editor

VOL. CXII

AUGUST, 1950

No. 8

## The Value of Good History-Taking in Medical Diagnosis

JOHN A. BOONE, M.D., Charleston, South Carolina

THE advances that the science of medicine has made in the last half-century have been so spectacular that they are a matter of common knowledge to everyone, doctor and layman alike. Moreover these advances at the present time take place so fast, and are becoming such good copy for the press, that many of us hear of them for the first time either by reading about them in the newspaper or having a patient demand for his ailment a new treatment that we hadn't heard of yet through our usual sources of information. All of this has resulted in a widespread belief that medical science can do anything that needs to be done in the prevention or relief of disease, and the philosophy of the times has caused some of our leaders both in and out of medicine to agitate strenuously for the idea that if medical science and the patients in need of its benefits can only be brought together by some form of medical socialism, the millenium will indeed have arrived.

Yet, although medical socialism is still not decreed in this nation, the steady growth of scientific medicine has been paralleled by a growing feeling on the part of both doctor and patient that something desirable is on the way out in the practice of medicine. The increasing compartmentalization into specialty practice, the increase in use of laboratory diagnostic procedures and the decline in

numbers of the general practitioner have combined to produce a loss of an indefinable but all-inclusive quality of medical practice that usually goes by the name of "the doctor-patient relationship." This lack is perhaps most keenly felt by the charity clinic patient (which by the way is the one we will all most resemble under socialized medicine) who is tossed back and forth between a number of specialists, each presenting to him a strange new face, a different set of questions, and a new battery of diagnostic instruments to prod him with. He ends up certainly with the feeling that he has been somewhere, but that he has been processed by a machine rather than interviewed by a doctor. And if by any chance he had to pay for these attentions, he would find that it was a very expensive machine into the bargain.

Perhaps as a more or less unconscious effort to remedy this situation, the specialty known as "internal medicine" has developed. I wish some genius would invent a short, accurate, understandable definition of what an internist does, or is. It is a question repeatedly asked me by my lay friends. Usually I give some such answer as "Oh, it's the practice of medicine with all the specialties left out." "I see, a sort of general practitioner, eh?" is the rejoinder. I reply "No, I don't deliver babies or treat them, and I never touch a knife." Whereupon my friend invariably moves on to some complaisant surgeon or obstetrician while I chew my nails in frustration. It may be that a medical edu-

cation is a prerequisite to understanding what an internist is. But until a good definition comes along, I should like to regard an internist as a physician who takes time enough to do a thorough history and physical examination, decides whether or what further diagnostic procedures are necessary, makes a diagnosis if he can, treats the patient if he can, or decides what specialist the patient needs to be referred to. In this respect he probably is nearer to the general practitioner than any other category. But he differs from him markedly in that he spends a great deal more time with each patient than the general practitioner can afford to spend, and in consequence charges accordingly. The extra time spent with the patient consists largely in the taking of a detailed and thorough history.

One of the first things in clinical medicine a student is taught is the taking of a long, detailed history, noting all the negative findings as well as the positive ones. This is a tedious affair, and the dose is often sugar-coated with the assurance that the student must follow the principle of using two hands while he is learning, but that experience will enable him to dispense with a great deal of the non-essential detail when he gets out into practice. Unfortunately to a great many students this means that it is to be borne with what grace it can while it is compulsory, but largely dispensed with when faced with the exigencies of an office full of patients. A few superior beings among us occasionally seem to develop an ability that borders on the psychic to make brilliant diagnoses on sketchy evidence. It's wonderful sport to watch them work, but they are a bad influence for the rest of us who must avoid the snap diagnosis like the plague if we are to be depended upon at all.

Some years ago we had a patient in our heart clinic in Charleston who began having repeated small hemoptyses. He had been pretty well studied, and was known to have a moderate degree of rheumatic aortic insufficiency and a negative Wassermann report. Off and on he had been treated for a peptic ulcer, and at one time had a series of intramuscular injections of Larostidin, which some of you will remember had a transient popularity in the treatment of ulcer. X-ray studies of his chest revealed no cause whatever for bleeding and the sputum showed no tubercle bacilli. We felt the man had some local tracheal or bronchial source for the hemoptyses. Our only bronchoscopist at the time was out of town, but the patient said that if we thought well of it, he would hitch-hike to a famous university clinic, get himself worked out and ask them to send us a report. We agreed to this, and two weeks later we received a brief letter from one of the resident physicians of that clinic stating that the diagnosis on our patient was syph-

ilitic aneurysm of the aorta with erosion into a bronchus. When our patient returned, he told us he had been examined in the clinic, his blood and urine checked, but that no further studies had been made. Obviously the story of a series of injections, the aortic insufficiency and the hemoptyses had been strung together into a pat diagnosis by the resident. If he had taken a careful enough history to learn what the injections had been given for, he would most probably not have made this snap diagnosis. Not long afterward this same resident physician was made professor of medicine at a large medical school. His research laboratory turns out a large amount of good work, but I hope he is letting someone else teach the medical diagnosis.

Even when physicians or students take a reasonably full history, it seems to me that the most common error is the failure, once a symptom is elicited, to work out thoroughly every possible vein of modifying information concerning that symptom. Medical diagnosis is very similar to detective work, and can carry the same sort of puzzle-solving satisfaction for the physician who will do a good job of it. One of the most commonly misdiagnosed syndromes I see is angina pectoris. I have several times seen patients labelled angina because of chest pain following exertion, where the referring physician had neglected to note that the pain occurred the day following the exertion rather than immediately after it. The neurosurgeon knows the importance of the exact chronological sequence of development of symptoms in the diagnosis of brain tumor.

Chronically recurring pain in the abdomen is a major diagnostic problem. It can be enormously simplified by balancing an accurate account of the symptoms against the statistically most common causes. Do not forget that the laxative habit heads this list, or that ten per cent of all people are said to have a peptic ulcer at some time in their lives. The periodic healing and recurrence of peptic ulcer often gives the clue when the relationship to meals, milk or soda is confused.

The high cost of laboratory diagnostic procedures can be markedly reduced by a little more time spent on a history which will indicate the tests likely to be positive, rather than the "shoot the works" attitude which tempts us to pass the buck to the laboratory and indulge our own intellectual inertia.

Finally, there is nothing more likely under modern conditions to restore the lost "doctor-patient relationship" than the opportunity of getting acquainted and gaining the patient's confidence during the taking of a leisurely, careful, sympathetic story of the patient's complaints and previous life history.

## Obstetric Hemorrhage

JOHN J. MARSELLA, M.D., Danville, Virginia

**VAGINAL BLEEDING** during pregnancy requires immediate efforts to discover the source of bleeding regardless of the quantity of blood loss or the duration of pregnancy. The causes of bleeding may be divided into those which have no relation to the pregnancy and those which are due to an abnormality or defect of the pregnancy itself. The most common causes of bleeding not due to the pregnancy are trauma, cervical lesions such as erosion, eversion and cervicitis, cervical polyps, carcinoma of the cervix, and vaginitis. These conditions may occur at any time in the pregnancy and they may be found by careful pelvic examination.

The treatment of bleeding due to the trauma of intercourse, of vaginal manipulation, or of instrumentation, is surgical, and should be done under aseptic technique. Bleeding from an eroded cervix is usually not profuse, and if the condition is proved benign and the bleeding is scant, it should be left untreated throughout the pregnancy. Cervical polyps may be attached to the endocervix or to the portiovaginalis, and may cause bleeding at various intervals, with or without noticeable bothersome leukorrhea. If the polyps are small they may be removed by a cautery or an electro-cautery loop. If large and having a firm pedicle, the base or pedicle may be crushed by clamp, the polyp removed, and the stump cauterized for hemostasis. Occasionally a polyp may be twisted off its pedicle without cauterizing the stump.

Though the incidence of malignant change in cervical polyps is low, it is a wise precaution to have all such tissue examined by a pathologist. Carcinoma of the cervix is one of the most serious complications that may be encountered during pregnancy. The bleeding may vary from a scant blood-streaked discharge to profuse hemorrhage, depending on the stage and extensiveness of the lesion. In any cervical lesion the Schiller test, consisting of painting the cervix with Lugol's solution, may be of some diagnostic aid; however, if the lesion is suspicious, a cervical cytologic smear or biopsy should be done. The management of pregnancy with cervical carcinoma varies according to the stage of pregnancy at which the diagnosis is made, although, from the standpoint of the carcinoma, the outlook is poor except in the earliest cases. The physiologic hyperemia of the pelvic or-

gans incident to pregnancy seems to stimulate activity and growth of carcinoma; consequently, in the early months of pregnancy treatment must be directed to the carcinoma without regard to the fetus. The treatment is essentially the same for carcinoma of the cervix in the non-pregnant woman. If the fetus is viable or nearly viable when the carcinoma is discovered a short delay is permissible, since radium and deep x-ray therapy have an ill effect on the infant. When the carcinoma is so far advanced as to be inoperable the infant should be delivered by cesarean section as soon as viability is reached. At the same operation the uterus is amputated on account of danger of infection from the ulcerating cervix and deep x-ray therapy instituted for its palliative effect. It is wrong to allow any of these women to go into labor and delivery to be effected through the cervix and vagina. The effect of labor and delivery upon a carcinomatous cervix is always one of direct traumatism, and laceration and rapid extension of the growth is inevitable.

The causes of bleeding attributable to pregnancy can be divided according to occurrence in trimesters. In the first trimester abortion, ectopic pregnancy hydatid mole are the most common causes of bleeding. Abortion may be threatened, inevitable, incomplete or complete. There are no reliable statistics on the incidence of abortion; it is estimated to be over twenty per cent of all pregnancies. Abortion is threatened when bleeding and cramp-like pains in the uterus occur in the early weeks of pregnancy. Such bleeding may be profuse from the onset, or may become so after days of dark-brown or bloody discharge. With continued vigorous bleeding abortion soon becomes inevitable.

In threatened abortion vaginal examination early is inadvisable, unless the clinical picture suggests ectopic pregnancy. In such case, a careful bimanual pelvic examination must be made. The cervix may admit the fingertip, yet the threat of abortion subside and the pregnancy continue. When the hemorrhage has become so profuse that fetal survival is impossible, or the fetus is already dead, the abortion becomes inevitable. Placental separation in such cases occasionally results in enough blood loss to demand complete evacuation of the uterus without delay. Following abortion in the early weeks of pregnancy the cervix contracts and forcible dilatation of the cervix must be done before the uterus can be completely emptied. As a rule, the most effective means of completing an



early abortion is by curettage. When the pregnancy has progressed beyond the twelfth to fourteenth week it is best to avoid curettage, if possible, since the uterus is boggy and the possibility of perforation of this organ is considerable. The more advanced the pregnancy the more likely it is that abortion will be incomplete because, in the early weeks, the ovum is less firmly imbedded while, later, the formation of a placenta makes adherence firmer and retention of the secundines more likely.

Missed abortion is a condition in which, although the fetus dies in utero, it is retained for weeks or even months. Litzenberg fixed on two months as the division line between ordinary and missed abortion. Missed abortion may do one of three things—it may be expelled spontaneously, it may become mummified or calcified, or it may undergo partial or complete absorption. The treatment is fairly well standardized; once the diagnosis is made the uterus should be emptied.

Another common cause of bleeding during the first trimester is ectopic pregnancy. In order of frequency the ovum becomes imbedded outside the uterine cavity, in the tube, in the broad ligament, in the tube and ovary, in the abdominal cavity. Many of these cases go unrecognized because they do not present an acute surgical emergency. The problem is one of diagnosis, since it is frequently difficult to distinguish between it and other pelvic conditions, such as pelvic inflammatory disease and pedunculated adnexal masses with torsion. The usual immediate history is that the patient has missed one menstrual period and irregular bleeding has occurred or that the periods seemed to be delayed a few days. The bleeding usually is not profuse or alarming. Painful sensations are noted early—usually sharp, stabbing or tearing pain in one side. Shoulder pain is quite common. Moving the cervix, as by pelvic examination or coitus, is exquisitely painful and this is a fairly characteristic sign of tubal irritation. The treatment of ectopic pregnancy is immediate laparotomy as soon as the diagnosis is made, regardless of the precise location of the pregnancy.

A less common, but nonetheless important, cause of bleeding in early pregnancy is hydatidiform mole. This represents an edematous or myxomatous degeneration, with necrosis of the chorionic villi. The cause of this condition is unknown and the source of the degeneration is in the ovum itself, as indicated by the fact that in twin pregnancies one fetus has been found normal, while the chorionic villi of the other had undergone hydatidiform degeneration. The usual picture is a fairly persistent brownish vaginal discharge, which develops into actual bleeding that may or may not subside, and a more rapid enlargement of the uterus than is to be expected for the period of gestation. A frequent

accompaniment is prolonged hyperemesis. The passing of grape-like or tapioca-like cysts of the mole is diagnostic. Hemorrhage is often troublesome during or after the evacuation of a mole, and the insertion of a firm intra-uterine pack is a wise routine precaution, both to prevent later relaxation and further hemorrhage and to bring away any remnants of the mole which will usually adhere to the gauze pack when it is removed. Following removal of a mole, quantitative Ascheim-Zondek or Freidmann tests should be done at intervals of one or two weeks until negative reactions are obtained. Thereafter, the tests should be made every four weeks for the next six months.

Some five per cent of hydatidiform moles undergo malignant change, consequently these patients must be followed closely for some time. Chorion epithelioma following a mole is rapidly fatal. The average life span after a chorion epithelioma is diagnosed is six months.

In the second trimester the causes of bleeding are pretty much the same as those just discussed.

In the third trimester the most common causes of uterine bleeding are placenta praevia and premature separation of the normally implanted placenta, both constituting a serious risk to mother and child. Placenta praevia is the more common complication. Little is known of the etiology of placenta praevia but two factors appear to favor its occurrence; namely, multiparity and chronic endometritis. It may be of the central, partial or marginal type, depending on the degree of encroachment on the interval cervical os. Findlay, in a review of the world literature ten years ago, found that among all cases of placenta praevia fifteen per cent occurred prior to the twenty-eighth week of pregnancy. Three years ago, at the Medical College of Virginia, unsuspected central placenta praevia was found at hysterectomy for bleeding in a patient eight weeks pregnant.

Typical of this condition is uterine hemorrhage without pain. Bleeding appears without the slightest warning and may be alarmingly profuse; however, the initial hemorrhage is rarely fatal. Each succeeding bout of bleeding is likely to be more serious as the patient's resistance becomes more and more impaired. Fetal mortality is necessarily high because of the combination of prematurity and fetal and maternal anemia. Fetal salvage has been markedly increased in the past fifteen years by the more frequent use of cesarean section and blood transfusions. The diagnosis is suggested by painless bleeding during the last trimester. Abdominal examination may show some type of malpresentation but more often the fetus will be found to present normally. Fetal heart tones are not affected. Soft tissue x-rays are frequently helpful in localizing the placenta; however, the diagnosis is



most often made on the bases of history and careful pelvic examination. It may be stressed that pelvic examination should not be undertaken in these patients, unless an adequate quantity of suitable blood is available for transfusion and the operating room is ready for immediate delivery.

There are two schools of thought with regard to treatment. One holds that individual cases are suitable for the insertion of a Voorhees or Barnes bag, the use of Willet scalp traction forceps, or Braxton-Hicks version when delivery from below is feasible, while the other holds that treatment resolves itself into amniotomy, or simply temporizing in those cases that are to be delivered vaginally, and cesarean section in those cases to be delivered abdominally.

Premature separation of the normally implanted placenta is another cause of uterine hemorrhage of obscure etiology. The separation may be partial or complete and the seriousness of this accident usually varies according to the degree or the extent of the separation and the accompanying hemorrhage. The bleeding may form a hematoma and be concealed within the uterus, being retained by adherent edges of the placenta or by the sheet of membranes below this, even though all the symptoms of hemorrhage are shown by the patient. Occasionally, such a hematoma ruptures into the amniotic sac. In other instances, the escape of blood is permitted only by the firm engagement of the fetal head in the pelvic brim. In the majority of cases, the blood separates the fetal membranes from the uterine wall and finds its way to the cervical canal. Fortunately, in most cases blood loss is moderate, but if it is marked the patient presents all the signs of acute anemia and passes into profound shock which may end fatally if delivery is not effected promptly. Concealed hemorrhage should be suspected if the degree of shock is out of proportion to the blood loss.

The diagnosis in a certain percentage of these cases is very difficult. In the absence of external bleeding sharp abdominal pain and a uterus of board-like consistency in a patient in the last trimester of pregnancy is almost pathognomonic of concealed hemorrhage. When, with the same picture, hemorrhage is external and pelvic examination fails to demonstrate the presence of a placenta praevia the diagnosis is practically positive.

The choice of treatment depends upon the degree of separation and the condition of the patient. When the separation is partial and the loss of blood is slight an expectant course of treatment may be followed and labor allowed to take its natural course. On the other hand, if the patient presents signs of acute hemorrhage, concealed or external, the uterus must be emptied immediately. A serious complication of placental separation is the extra-

vasation of blood into the myometrium, dissociating the muscle fibers and causing the uterus to remain atonic following delivery. This results in profuse post-partum bleeding and requires amputation of the uterus. Fortunately, this happens rarely and, when it does occur, the clinical picture is such that abdominal delivery is necessary and the condition of the uterus can be seen.

There has been a gratifying improvement in maternal mortality and morbidity from obstetric hemorrhage in recent years. This can be attributed to a combination of factors among which are the more frequent hospitalization of women with bleeding complicating pregnancy, the more liberal use of blood and blood substitutes, and technical improvement in surgery and anesthesia. In 1930 the overall maternal mortality in the United States was 6.7 per thousand live births. Last year it was 2.2 per thousand live births. Despite the steady statistical improvement, hemorrhage is still the leading cause of fatalities during and immediately following pregnancy.

#### ACUTE NONSPECIFIC BENIGN PERICARDITIS

(Elwyn Evans, Orlando, Fla., in *Jl. A. M. A.*, July 15th)

The differential diagnosis usually is not difficult if one keeps the possibility of acute pericarditis in mind. Eleven cases of acute benign nonspecific pericarditis seen in private practice; eight in one year.

The complaint was chest pain aggravated by body motion or deep inspiration, substernal in seven cases and severe and sudden in onset in five. A pericardial friction rub was heard early in 10 cases, in five only because pericarditis was suspected and the rub carefully listened for. Ecg. changes indicative of pericarditis were present in 10 cases. Pericardiocentesis is not indicated unless there is evidence of serious cardiac tamponade.

#### Addendum

Four more cases of acute nonspecific pericarditis have been seen. Symptoms in one of these occurred seven days after sinus operation. Aureomycin was given to two patients. The course was uneventful but was no better than that of several other patients in the series. No evidence of rheumatic heart disease has appeared in any of the patients in this series since they were first seen.

#### PSEUDOPERICARDITIS

(Sidney Schnur, Houston, in *Jl. A. M. A.*, July 15th)

The purpose of this report is to call attention to an error in cardiac auscultation not infrequently made by experienced physicians. Textbooks of physical diagnosis and cardiology do not discuss this subject, and the error results in the diagnosis of pericarditis.

This error is most likely to be made in thin-chested patients with retracted interspaces who have pronounced apical pulsations, and when a Bowles-type stethoscope is used. The movement of the apex through the interspace during systole may produce on the stethoscope diaphragm a scratching sound easily mistaken for a pericardial friction rub. This sound can be made to disappear 1) by increasing the pressure of the stethoscope, 2) by placing the stethoscope between the ribs, 3) by use of a bell-type stethoscope.

CLINICIANS REPORT that combined therapy with penicillin and streptomycin is often successful in patients with enterococcal endocarditis.—*Edi. Jl. A. M. A.*, July 1st.

## The Management of the Third Stage of Labor

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A PROPER UNDERSTANDING of the third stage of labor is imperative in the practice of good obstetrics. It is in this stage that mismanagement leads to post-partum hemorrhage and puerperal infections, the two leading causes of maternal mortality. Since the vast majority of blood loss during delivery occurs in the third stage, this phase of delivery deserves close consideration.

### MECHANISM OF LABOR IN THE THIRD STAGE

The method whereby the normally-implanted placenta is separated and extruded has been of interest for centuries. The older writers believed that separation occurred by the formation of retroplacental hematoma which gradually dissected along the lines of cleavage in the decidua basalis. Subsequent uterine contractions drove the blood along the cleavage lines until separation was complete except at the margins. Eventually these also became freed and the placenta was liberated from the uterine wall.

The newer concept is that the retroplacental hematoma is effect and not cause of separation. As the uterus decreases in size during labor the placenta must accommodate itself to an ever-diminishing area of attachment. It is thrown into folds, but remains attached by reason of intrauterine pressure. As the uterus is emptied of its contents with delivery, within a very short time the surface area of the uterus interior is decreased by 50 per cent. The placenta, being inelastic, must become separated, and it is here that the retroplacental hematoma is formed. The whole mass is then pushed into the lower or inactive uterine segment or upper vagina by further uterine contractions, from which point it is easily delivered. The large sinuses underlying the placental site are sealed off by both muscular contractions and retractions. As DeLee puts it, "living ligatures" are tied around the thin-walled vessels coursing through the uterus by the shifting of the muscle layers and shortening of the muscle fibres.

### MANAGEMENT OF THE PLACENTAL STAGE

It has been estimated that 250-300 c.c. of blood is the average amount lost during delivery. Most authorities agree that blood loss in excess of 500 c.c. constitutes postpartum hemorrhage. McCormick<sup>1</sup> thinks a better form of expression would be the relationship of blood loss to body weight. Using this basis one per cent or more blood volume

loss would constitute postpartum hemorrhage. In an effort to minimize blood loss during the placental stage of delivery a number of methods have been introduced over the years.

1. In 1853 Credé devised a method aimed at hastening the separation of the placenta and then expressing it from the uterine cavity. By this method the uterus was grasped through the abdominal wall immediately after delivery of the child and was gently kneaded to stimulate uterine contractions. With the first contraction the uterus was squeezed in hopes that the placenta would be extruded much as the meat of a grape can be squeezed from its skin. This should be employed only during a contraction, when firm steady pressure is made downward in the axis of the superior strait. A popular variation of the Credé method is that devised by Pastore, wherein both hands of an assistant are used: one hand over the fundus as in the original Credé, the other hand parallel to and just above the symphysis. The upper hand squeezes the uterus and pushes the fundus downward; the lower hand prevents the uterus from entering the pelvis. When the placenta has entered the upper vagina the operator delivers it from below by cord traction.

The disadvantage of both the Credé and Pastore methods is the likelihood of trauma. The uterus is bruised by too vigorous application of these methods; intestinal coils in the lower abdomen may be injured, and the bladder is occasionally traumatized severely. In addition, frequently partial separation alone is accomplished which invariably leads to unnecessary blood loss. Shaw<sup>2</sup> states that a large percentage of cases of retained placenta are the result of an irregularly contracting uterus, produced by the attendant's faulty employment of the Credé method.

2. A second and popular method for expressing the placenta is that devised by Brandt.<sup>3</sup> The medical attendant takes care of the baby first, ignoring placental separation. After five minutes, gentle traction is made on the cord with one hand and the uterus is pushed upward while making gentle pressure over the lower uterine segment. If the placenta is separated the fundus will rise without making traction on the cord. Suprapubic pressure will then displace the placenta down into the vagina from whence it can be delivered by cord traction. This method is applicable to a placenta which is normally separated. It is a watchful-waiting procedure suitable for a normal third stage. It falls short, however, in the presence of severe postpar-

Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.

tum bleeding or a placenta which fails to separate.

3. Davis and Boynton<sup>4</sup> at the Chicago Lying-In Hospital have introduced what appears to be the safest and most practical method of placental delivery in use today. After the baby's head and anterior shoulder have been born, ergotrate gr. 1/320 is administered *IV*. After an interval of 30-40 seconds, during which time mucus is aspirated from the infant's upper air passages, the rest of the child is delivered slowly. The cord is clamped and the child placed in the hands of an assistant. The operator then returns to the patient and places one hand on the uterus and with the other picks up the cord. With the first uterine contraction pressure is made on the fundus, and at the same time gentle traction is made on the cord. In the vast majority of instances the placenta will be found free in the lower uterine segment by the time the doctor returns to his patient. It must be remembered that speed is essential in this method, and if too much time be lost the placenta will become incarcerated. Another disadvantage to this method is that occasionally the cord will be torn off by too vigorous traction, especially in a velamentous attachment of the cord.

The advantages, however, far outweigh the disadvantages. By delivering the baby slowly the uterus contracts as it empties, thereby sealing off the uterine sinuses and keeping blood loss at a minimum.

There are several variations of this method, but none seems to compare favorably with the original. One common method is the use of pituitrin in place of ergotrate. There are disadvantages to this preparation, however. In 1939 McMann<sup>5</sup> showed that shock could be produced by the administration of posterior pituitary extract to sensitized individuals. This is true of the purified as well as the crude preparation, as demonstrated by Kanter and Klawans.<sup>6</sup> Another disadvantage is the brief action of the pituitary extract compared to ergotrate. The action of the former lasts 15-20 minutes, of the latter 2-3 hours.

Another variation in common usage is delaying the administration of the oxytocic until the baby is completely delivered. While this is helpful in shortening the third stage and conserving blood, it does not compare with the *IV* administration prior to delivery insofar as blood loss is concerned.

4. Manual extraction of the placenta may occasionally be needed. Cacciarelli<sup>7</sup> advocates the manual removal of the placenta under all circumstances. This seems radical, but he proves that the procedure is not as dangerous as many believe. It must be employed where there is alarming hemorrhage in the third stage prior to placental delivery. An aseptic technique must be rigidly adhered to and the details of the method well understood.

The two greatest risks are introduction of contamination and perforation of the uterus. It should be kept in mind that fecal material is always present in the vicinity of the introitus and can be swept upward by the exploring hand. It must also be remembered that manual separation should begin at the superior placental margin with the fingers directed toward the placenta, not the uterine wall. Manual extraction, in addition to removing the placenta, gives the operator a chance to explore the uterus for tears, tumors, placental fragments or lobes, etc. The routine following delivery of the placenta is in no wise different from other methods of placental expression.

5. A method with which I have had no experience, as described by Bradley,<sup>8</sup> employs a hydraulic principle in separating the placenta. Five hundred c.c. hot sterile saline is injected into the umbilical vein. The bulk of the injected solution causes the placenta to enlarge and become heavier and firmer, while the heat stirs up uterine contractions. The success of this method is estimated between 70 and 90 per cent, but it is admittedly of no use in the presence of postpartum hemorrhage.

#### COMPLICATIONS OF THE THIRD STAGE OF LABOR

1. The complication of commonest occurrence during the placental stage of delivery is hemorrhage. In the absence of lacerations, the cause almost always lies in the placenta. By far the most frequent cause is partial separation. Uterine sinuses cannot completely close until the placenta is out and the uterus empty. Treatment therefore must rest with delivery of the placenta, manual extraction if the hemorrhage is great, or one of the other methods if bleeding is moderate.

If the placenta has been implanted low in the non-contractile portion of the uterus, uterine packing is frequently indicated. There is little, if any, increase in morbidity from this procedure, and by counterpressure bleeding is almost invariably controlled.

2. Retention of secundines is a very common complication. These may be either small fragments, cotyledons, or a succenturiate lobe, and either will lead to continued bleeding in variable amounts. The placenta should always be inspected following delivery, and if defects are noted, the uterus must be explored. Fragments, if found, can be removed manually.

3. Uterine atony is occasionally encountered. This is particularly prone to occur following a long, exhausting labor. Supportive treatment during labor, in the form of glucose, fluids, analgesics, and occasionally calcium, will do much in preventing this complication. Heavy sedation prior to delivery, or profound anesthesia during delivery, will likewise frequently produce an atonic uterus. Here again prevention is far better than cure.



A simple point which must be remembered is this: a full bladder will keep a uterus from contracting well. Every patient should be catheterized prior to delivery.

4. Occasionally the placenta will become trapped after separation from the uterine wall. This is particularly true if one is too slow following the IV administration of ergotrate. A constriction ring forms in the lower, active portion of the uterus and prevents the placenta passing downward into the vagina. This condition will occasionally disappear spontaneously, but it usually requires one of three things: (a) deep anesthesia; (b) epinephrine hydrochloride, 5-6 minims IM; (c) amyl nitrite by inhalation. Rucker<sup>9</sup> has used the latter two methods for years with excellent results. Any one of the three methods may have to be combined with manual extraction.

5. Inversion of the uterus is a rare complication but one that carries great hazard. It is usually the result of too vigorous traction upon the cord, especially if the placental site is high in the uterus. If traction is made while the uterus is relaxed, especially if an assistant is attempting the Credé expression, this complication can and will occur. The best treatment is immediate replacement of the uterus. Most authorities state that the placenta should be left intact and removed somewhat later. In the two cases that I have seen the placenta was removed manually while the uterus was inverted, thereby decreasing the uterine bulk, and the uterus quickly restored to its normal position. In both cases packing was resorted to and no shock whatsoever was encountered, nor was bleeding excessive.

If the inversion is of long standing, it may be necessary to replace the mass under deep anesthesia, by either traction from above through an abdominal incision, or by the vaginal operation of Spinelli. Johnson<sup>10</sup> advocates reduction from below. Pushing the entire mass high in the abdomen from below will cause the uterine ligaments to, first, dilate the constriction ring and, second, restore the uterus to its normal position. This applies to recent inversion only.

6. Placenta accreta, a very rare condition, can be effectively treated only by hysterectomy. The chorionic epithelium has penetrated deep into the muscularis and there is no line of separation. If manual extraction or curettage is attempted hemorrhage will invariably result. The uterine musculature is unable to seal off the open sinuses and exsanguination will probably result. A conservative approach is likewise not recommended; as slough and necrosis occur, sinuses are opened and bleeding and infection result. By the time the decision is made to operate the patient's condition is such that she is a poor risk.

#### SUMMARY

1. The importance of the third stage in conserving blood loss and preventing infection demands an understanding of the mechanisms involved.

2. In the absence of brisk bleeding Brandt's method for the delivery of the placenta is effective as a rule. The Credé method is unnecessarily traumatizing.

3. Intravenous ergotrate following delivery of the head and anterior shoulder is probably the best method, all things considered. Speed is essential in order to prevent trapping of the placenta.

4. Manual extraction of the placenta is occasionally needed. If properly performed the danger of perforation or infection is minimal.

5. A full bladder or a uterus full of clots can inhibit uterine contractions.

6. It is much easier to prevent third-stage complications than it is to treat them.

—131 Jefferson Avenue

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#### SPECIALIZATION—ITS VALUE AND ABUSE

(Sir Robt. A. Young, in *Proc. Royal Soc. of Med.* (Eng.), Dec.)

The main objection to specialization is the failure of specialists to regard the human organism as a whole.

Specialization is having several unfortunate results in medical education and general practice. Many fear we are witnessing the passing of the general physician. The student in all stages of his curriculum is taught by specialists, the best of whom are enthusiasts. Even in the general wards too many cases are directed or gravitate to the physician or surgeon specially interested in the particular organ or system involved.

When the present pendulum swing of change has swung to its limit, it is predicted a Minister of Health will send an exhortation, direction, or special instruction to the Medical Schools to produce doctors of the old type, with their eyes and interest on the general make-up of their patients and not on special departments of his economy.

#### ADVANTAGES AND LIMITATIONS OF THE QUANTITATIVE VDRL SLIDE TEST

(Anne C. Kimball, Ph.D., and Henry Bauer, Ph.D., Minneapolis, in *Minn. Med.*, June)

There is no evidence that the height of titre of any quantitative tests for syphilis correlates directly with clinical activity. The value of the quantitation is that the higher the titre is, the stronger the serological evidence is for supporting a diagnosis; and the higher the dilution in which the test is positive, the less the possibility of a false positive.



## Clinical Experience with Dromoran Hydrobromide (NU 2206) for the Relief of Chronic Pain

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**M**Y PRIMARY INTEREST in the use of Dromoran Hydrobromide began in April, 1949, after careful consideration of its possible usefulness for the relief of pain in so-called incurable cases of carcinoma. Clinical investigation of this compound seemed worthwhile in view of the promising preliminary report by Gross and his associates at the University of Iowa.<sup>1</sup>

Dromoran Hydrobromide is the trademark name for 3-hydroxy-N-methylmorphinan hydrobromide. It has also been reported in the literature as "Nu-2206," its experimental code designation. This material is a new synthetic related to the morphine series, it is longer-acting than morphine and has an analgesic potency of 3 to 4 times that of morphine sulfate by weight.<sup>1</sup> It was originally made available to us in 1-c.c. ampules containing 5 mg. per c.c. and subsequently, in October, 1949, in 2-mg. tablets intended for oral use\*.

For many years my colleagues and associates have referred to me patients with carcinoma who have had all the surgery and radiation that they could stand for a given length of time. It has been my practice to prescribe various types of analgesics, opiates and sedatives for the relief of pain in these cases. The present report describes my experience with eight such cases, and with four cases in which prolonged pain was due to other causes (acute rheumatoid arthritis, acute subdeltoid bursitis, acute sciatic neuritis, acute herpes zoster with ulceration). It is realized that this is a small number of cases; however, while there is ample evidence in the literature of the effectiveness of Dromoran Hydrobromide for the relief of acute pain,<sup>1,7</sup> there are few studies of as prolonged administration of the drug as in this series.

The dosage plan used in this study was adapted to the needs of the individual case. Dromoran Hydrobromide was given subcutaneously in 5-mg. doses, or orally as 2-mg. tablets. All of the patients were relieved of pain, some more than others, as might be expected with any analgesic. There was no nausea or emesis that could be attributed to the drug. The amount of Dromoran Hydrobromide needed for the control of pain was less than that required with other analgesics. Untoward effects were noted in two cases in which opiates had not been used previously. Both patients said they experienced "a general numb feeling." The dose was

then reduced and its effects explained to the patients. Dromoran Hydrobromide was then continued in both cases with satisfactory relief of pain. In two cases of far-advanced metastasis with visceral involvement—one hepatic and the other renal—mild delirium was experienced and disorientation following parenteral administrations of 5 mg. No other untoward reactions were observed and there were no changes in the hemograms that could be attributed to the drug. In general, the patients expressed a preference for Dromoran Hydrobromide, despite the fact that there was no euphoria. Drowsiness was not commonly experienced. In most cases a hypnotic was employed at night.

Dromoran Hydrobromide seemed to have no effect on the appetite and adequate nourishment was possible in all cases, including one case in which tube feeding was required following a radical operation on the neck. In the one case of acute bursitis the drug was given for 21 consecutive days, with such alleviation of symptoms as then to permit the substitution of aspirin during the day and Nembutal, gr. 1½, at night, for Dromoran Hydrobromide. This patient showed no withdrawal syndrome. In the one case of addiction to Pantopon it was possible to reduce the daily requirement by one-third when Dromoran Hydrobromide was administered.

The cases of advanced carcinoma included in this report are: carcinoma of the breast with generalized bone metastasis, 3; carcinoma of the pharynx with metastasis to the neck, 3; carcinoma of the kidney with generalized metastasis, 1; carcinoma of the breast with skin and lung metastasis, plus renal carcinoma with metastasis, 1. These patients whose cases make up this list lived under my care for 3-15 months, and during the past year have received Dromoran Hydrobromide except during the very last weeks of life, when Pantopon was often employed for its quieting effect and for relief of anxiety.

The care in these advanced cases of carcinoma is governed by the following considerations. These patients are generally not hospitalized; therefore supervision must be adapted to their care at home. When surgery, radiation and other measures have done their best, it is increasingly important to provide for the relief of pain. As these disease processes advance, freedom from pain and general

\*Supplied to us by Dr. M. J. Schiffrin, Hoffmann-La Roche, Inc.

comfort become increasingly important to patient and family. The disheartening experience of following a patient's downward course is considerably lightened by the grateful appreciation of the patient and the family if pain can be adequately controlled.

The general care of these patients at home includes:

1. High-protein diet
2. Vitamins
3. Iron (for anemia)
4. Hypnotics at night
5. Stilbestrol to elderly women with metastasis from carcinoma of the breast
6. Other supportive treatment when indicated from a general medical standpoint.
7. Instruction of members of family in care of patients, except nursing aid in the terminal stage

Since the advent of the oral tablets of Dromoran Hydrobromide I have used them by preference. A dosage of 2 mg., three to four times in 24 hours, has been most satisfactory in the care of these patients. An example of the effectiveness of this procedure is the following case, not previously described.

An elderly woman with generalized bone metastasis and intractable pain had received maximal x-ray therapy, according to the radiologist. She had been given Stilbestrol with very little, if any, relief, from nerve root pain in the upper and lower spine areas. She was given 4 tablets of Dromoran Hydrobromide during every 24 hours and is, at the present time, up and about and feeling well.

#### SUMMARY

1. Dromoran Hydrobromide, in our opinion, is a good adjunct for the relief of pain in advanced cases of generalized carcinomatosis.

2. The oral administration of Dromoran Hydrobromide is particularly advantageous when the patient is cared for at home.

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#### POISONING BY A POPULAR INSECTICIDE

(*New York State J. Med.*, July 1st, 1950)

Parathion is now being used by farmers, florists, and commercial spray operators in the form of aerosols, sprays, and dusts. So far its use by home gardeners has been discouraged. Three fatalities and an unknown number of poisonings occurred during last season. All of the fatal cases followed prolonged inhalation of Parathion wettable powder or spray mist and extensive skin contact.

The initial complaint is usually giddiness or headache, followed often by abdominal cramps, diarrhea, nausea, weakness, and a sense of contraction in the chest. If the cholinesterase level drops precipitously, marked signs of parasympathetic stimulation will be evidenced by hyperhidrosis, miosis, lacrimation, and salivation.

Atropine, 1 or 2 mg. per hour up to a daily total of 20 mg. of the drug, may be required to control respiratory symptoms and to keep the patient fully atropinized. The intravenous route is best for those severely poisoned. Atropine does not relieve the muscular weakness. Artificial respiration may be necessary for many hours—clearing of the airways by suction if they are obstructed or positive pressure O if pulmonary edema develops may be life-saving. Patients severely poisoned can completely recover after full atropinization and artificial respiration. Morphine should not be given. The acute emergency requiring atropine and artificial respiration may last 48 hours.

Physicians in areas where large scale use of phosphate insecticides is prevalent should be on the alert for people who give a history of vertigo followed in two to eight hours by nausea, abdominal cramps, vomiting, diarrhea, muscular twitching, pressure in the chest, convulsions, coma, or pulmonary edema. They may be severely poisoned, and the prompt administration of atropine will block many of the parasympathetic effects.

If a person exhibits toxic symptoms from exposure to the phosphate insecticides, he should be warned against further exposure until restoration of blood and tissue cholinesterase to normal levels has taken place. Because all the phosphate insecticides inactivate cholinesterase, persons exposed to any specific one may be susceptible to any of them for a considerable period of time. Restoration of the cholinesterase level occurs slowly.

#### CHANCES OF MULTIPLE BIRTH

The chances that a blessed event will produce twins are one in 92. Triplets are born once in 9,400 confinements, quadruplets once in 620,000 confinements. The likelihood of quintuplets is extremely remote and that they will live even more so. Only two authenticated cases in medical history of their surviving infancy are the Dionnes of Canada and the Diligentis of Argentina.

The chances of a multiple birth are shown to increase progressively with the advance in age of the mother to a maximum at ages 35-39. The probability is 17 in 1,000 for women in their late thirties, 6 in 1,000 for teen-age mothers. At every age period, the chances that a confinement will yield plural births are greater for Negro than for white mothers.

#### TREATMENT OF ASCARIASIS IN CHILDREN

(J. N. Etteldorf & L. V. Crawford, Memphis, in *J. A. M. A.*, July 1st)

In our hands 6 mg. Hetrazan per kilogram, three times a day for at least one week, without purgatives or fasting, is effective for removal of ascarids. The drug was nontoxic in dosages ranging as high as 10 mg. per kilogram three times a day for one week. A dose of 10 mg. per kilogram three times a day might be indicated in resistant cases.

# DEPARTMENTS

## GYNECOLOGY

### GERERAL ASPECTS OF THE NORMAL STRUCTURE AND FUNCTION OF THE CERVIX UTERI

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THE HUMAN CERVIX UTERI stands guard over the body cavity—serving as a barrier between it and the outside world. Below this structure bacteria grow abundantly; above it none are to be found unless injury has occurred. This function, and the importance of the cervix in fertilization, pregnancy and parturition, are recognized, although the nature of this role is only imperfectly understood. It has been only recently that regular cyclic alterations in the cervical mucosa, analogous to those in the Fallopian tubes, uterus and vagina, have been recognized in many other animals. This is doubtless due to the less dramatic nature of cyclic alterations in this portion of the female reproductive tract.

This review is an attempt to correlate the structure and function of the cervix uteri with particular reference to normal physiological processes. Details of the anatomy and physiology of the normal human cervix are fragmentary in many of these aspects; however, information on the rhesus monkey is more extensive and is generally applicable. In addition, much information obtained from the more common laboratory mammals is pertinent. Unless otherwise specified, the following information refers to the human.

The cervix uteri, which is Mullerian in origin, is separated from the corpus uteri by a rather definite constriction, the internal os, and communicates with the vagina through the external os. The cervix uteri has two regions—the supravaginal and the lower vaginal (portio vaginalis)—the latter being surrounded by vaginal recesses. In the human the cervix is a tilted but nontortuous canal 2 cm. in length. In the rhesus monkey, which is an important source of information translatable to human female reproduction, the cervical canal is tortuous and has a somewhat different gross anatomy,<sup>1</sup> but microscopic detail and response to hormones seem to be directly comparable in the two species.<sup>2,3</sup> In both species tall columnar cells line the cervical canal and the glands which extend from the canal, dipping into the fibroelastic connective tissue stroma. The transition zone where the stratified

squamous epithelium of the vagina alters into the characteristic mucoid epithelium of the cervix is variable, and is said to be more anterior in women who have borne children. The cervix has two layers of smooth muscle external to the stroma, an inner circular and an outer longitudinal layer. The cervix differs somewhat from the corpus uteri in lacking the inner longitudinal muscle layer and in having those layers present more sharply defined.

In the newborn human female the cervical mucosa, to a greater extent than the rest of the reproductive tract even, is in a "mature" condition which involutes within a month to an "undeveloped" condition which persists throughout childhood.<sup>4</sup> In the adolescent rhesus monkey<sup>3</sup> there is a gradual increase in the development of the glands and cervical mucosa due to increasing estrogen titers, presumably, which culminates in the initiation of menstrual cycles and the characteristic<sup>5,3</sup> cervical cycle.

Cyclic changes in the cervical mucosa during the ovulatory cycle, which have been studied in women<sup>5,6,7,8</sup> and in the monkey,<sup>3</sup> indicate that there is growth in cell heights in the lining epithelium and in the cervical glands during the first few days of the cycle; i.e., during the time of menstruation. This is followed by a slight regression of the cells. In the preovulatory phase of the cycle, in both human and monkey, there is a gradual increase in canal and glandular cell heights and in glandular development. The cell heights drop sharply at the time of ovulation and there is histologically much evidence of increased secretion of mucus. An increased amount of mucus can be aspirated from the cervix.<sup>9,10,11</sup> In the postovulatory phase there is a rapid and considerable increase in cell heights; the development of the cervical glands continues and they become extensively branched and tortuous. Premenstrually the cells and glands secrete extensively—again a time of increased cervical mucus output.

Studies of the blood estrogen level in women<sup>12,13</sup> show that there is increase of estrogen in the blood during each phase of cervical growth, and that very shortly preceding cervical secretion there is a decrease in the amount of blood estrogen. This fact, and results of studies on the effects of hormones on the histology of the cervix, indicate that the cervix uteri is particularly responsive to estrogen and that the chief agent responsible for the growth of the cervical cells and cervical glands is estrogen.

Thus, the pattern of events in the ovulatory cycle of the cervix uteri is an increased development of cervical cells and glands in response to estrogen, and a fluctuation in cell heights and amount of cervical secretion in response to changes in estrogen level. This explains to a certain extent the role of the cervix in fertility; it having been dem-



onstrated that at midcycle the cervical mucus is most penetrable by spermatozoa, is most abundant and nutritive, and is least viscous; and it is at midcycle that fertilization occurs. At other periods in the cycle the cervical mucus is less abundant, less nutritive, more viscous, and constitutes a distinct barrier to sperm penetration,<sup>11</sup> and, perhaps, to other objects. The increased mucus production at the time of menstruation has been interpreted as the cervical counterpart of the uterine bleeding and endometrial sloughing.<sup>3</sup>

Anovulatory cycles occur frequently in the rhesus monkey, and more frequently in the human than was formerly realized. In the monkey, the cervical mucosa during an anovulatory cycle gradually develops under the influence of estrogen, but not to such degree as in a normal ovulatory cycle. It may be assumed that there is a similar change in the human. During pregnancy there is a remarkable proliferation of the mucosal glands, the entire lining membrane becomes a veritable honey-comb of actively secreting, branched, tubular glands with greatly enlarged lumina; the same phenomenon has been observed in women<sup>14</sup> and in the monkey.<sup>3</sup> These changes are most pronounced during the first few months of pregnancy, but the secretion is continuous and abundant throughout pregnancy. The mucus thus produced forms a cervical plug, the expulsion of which occurs with the initial dilatation of the cervix at parturition. The remarkable development of the cervix during pregnancy has been ascribed to continued stimulation by estrogen<sup>3</sup> which is at a high level throughout pregnancy.<sup>15 16 17 18</sup> However, other investigators<sup>19</sup> do not think that estrogen alone can account for the elaborately developed cervix.

After the menopause the cervix regresses to an indifferent undeveloped state, exhibiting little glandular development or secretion.<sup>6 7 8 9</sup> In the castrate or amenorrheic animal the cervix is also in an unproliferated and inactive state.<sup>3</sup>

There are rather large numbers of leucocytes found in the "vaginal" smear, some of which are derived from the cervix. Allen<sup>20</sup> found enormous numbers of leucocytes in the cervical glands of monkeys after extended periods of hormone treatment, and thought it probable that the appearance of leucocytes at the end of a period of hormone stimulation might be a normal cyclic event. Hartman<sup>21</sup> said that the disappearance of leucocytes might be due to follicular hormone; however, Hamilton<sup>3</sup> found them abundant in the cervical wall, although not in the lumina of the glands nor in the cervical canal, during periods of high estrogen output. The significance of the fluctuating occurrence of the leucocytes cannot be stated.

The external cervical os is said<sup>11</sup> to be relaxed at midcycle and this relaxation to be a factor in

the increased mucus flow at this time. The forces which initiate the contractions of the cervical musculature during parturition are of particular interest. These contractions have been studied *in vivo* and *in vitro* in certain laboratory mammals.<sup>19</sup> A water-filled balloon was inserted into the cervix of rabbits, guinea pigs and cats and these cervixes were contracted under the influence of the oxytocic posterior pituitary principle.<sup>10</sup> Newton<sup>22 23</sup> found that the cervixes of laboratory animals when studied *in vitro* are insensitive to oxytocin. The factors that initiate cervical contractions are as obscure as those affecting uterine contraction.

In summary:

The cervix uteri is of importance in fertilization, pregnancy and parturition.

The cervical mucosa undergoes characteristic changes under the influence of estrogen; there is a growth of the cells and of the glands with an increase of estrogen and a secretion from these upon estrogen withdrawal during the menstrual cycle.

The cervical mucus plays an important role in fertility for it is most penetrable by sperm and most suitable for sperm viability at midcycle.

The external os is relaxed and the cervical mucus forms a plug at this time, and the expulsion of this plug results from the cervical dilatation which initiates parturition.

In pregnancy, the cervical glands undergo a remarkable proliferation under the influence of estrogen.

The cervical musculature has a role in parturition, but the mechanisms involved are obscure.

The role of the cervix in preventing invasion of bacteria is of considerable importance.

Cells from the cervix contribute to the vaginal smear.

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## DENTISTRY

J. H. GUION, D.D.S., Editor, Charlotte, N. C.

### OUR KNOWLEDGE OF THE DENTAL CARIES PROCESS

DENTAL CARIES is a great concern of all of us. An Alabama teacher<sup>1</sup> takes inventory of the present knowledge.

Caries is an environmental process, involving inclusion of fermentable carbohydrates in the diet, presence of bacteria in the oral cavity, and physical and chemical characteristics of enamel surface. All experimental diets which produce caries in animals are rich in fermentable carbohydrates, which on being ingested are retained in the mouths of humans for considerable periods and produce acid within a short time of their retention. The amount of acid is greater in the mouths of caries-active individuals. The acid may itself dissolve tooth substance, and it may provide a medium for other bacterial growths.

1. J. F. Volker, Dean, Univ. of Alabama School of Dentistry, in *California State Dental Assn.*, May-June.

Preliminary evidence indicates that bacteria-free rats do not develop caries, regardless of sugar in the diet. Although it is not certain that lactobacilli are responsible for caries, their numbers roughly parallel the degree of caries which is found. The protein matrix of enamel is also destroyed in caries, and this may be part of the caries picture. Hydrolysis of proteins may produce substances which attack enamel. Morphology of tooth which favors retention of foods, and minute rough surfaces due to poor calcification which have the same action may favor caries development.

The rate of salivary flow and its neutralizing power can also play a part in caries reduction. Saliva may contain bacterial inhibitors which prevent growth or organisms involved in caries. Other factors which may play a part are physical state of the carbohydrate, maternal prenatal diet, heredity, and changes in tooth structure with age. It has been shown that the surface of enamel can respond to external influences, as in fluoride application, and this may be an important factor in caries experience. Although progress has been made in our understanding of the etiology of tooth decay, many aspects of the problem remain highly controversial.

Dental caries is often referred to as a disease of modern civilization but this description for purposes of accuracy is misleading. The records show that there was much tooth decay in ancient and primitive peoples. An examination of pre-Columbian Indian skulls shows that, prior to the coming of the white man, the natives experienced tooth decay. There is, however, reason to believe that dental caries is aggravated by civilization, since in those countries where the degree of culture has arisen and fallen and subsequently arisen, the pattern of tooth decay attack has undergone similar changes. A classical example of this is England. Tooth decay in the original natives was minimal. It was succeeded by a fairly high caries pattern during the Roman occupation, reverting to a low when the native authority was reconstituted, and gradually increasing to the present high level with the rise of British culture. There seems little doubt that although the early American colonists were subject to some tooth decay, the disease has been increasing during the last several hundred years within the United States.

When considering the role of the fermentable carbohydrates in causing dental caries, greatest stress has been placed on their ability to be retained on the tooth surface and attacked by the oral bacteria. Recent experimental data, if confirmed, indicate that the ingestion of refined carbohydrates by the pregnant mother greatly enhances the caries-susceptibility of those teeth of the offspring that are undergoing calcification; also that the ingestion of sugar by the mother during

lactation further increases the post-eruptive caries-susceptibility of the offspring's teeth.

It should be borne in mind that ingestion of sugar after tooth eruption is an essential for caries production in experimental animals; also that a primitive people (Eskimos), whose fermentable carbohydrate intake during tooth formation is either low or negligible, develop severe dental caries when exposed to diets high in refined carbohydrates.

In evaluating the significance of these observations, it should also be recalled that experimental animals most often used in caries studies have only one dentition, and that in humans the great majority of the permanent teeth are mineralized after birth.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### DIAGNOSIS OF VIRUS AND RICKETTSIAL INFECTIONS

IN RECENT YEARS so much has been written about virus diseases and peptic ulcer as to make these conditions subjects of general conversation and writing comparable to the "too much acidity" of 50 years ago.

Horsfall<sup>1</sup> gives reliable information on the problem presented by virus and some related infections.

As many as 60 virus and rickettsiae are known to cause human disease, and no one escapes infection.

The simplest method of diagnosis is direct visualization of the organism. All the rickettsiae and the large viruses—for instance, those of psittacosis—can be seen with an ordinary microscope. The infectious agent is often recovered and identified after injecting throat washings, feces, spinal fluid, or other material into chick embryos or susceptible animals.

A specific antibody response is demonstrated by three common methods, the simplest one of which is the hemagglutination inhibition test. This is based on the faculty of influenzal and other viruses to clump chicken or human red-blood cells; antibodies in convalescent serum combine with the organism and prevent agglutination. The complement-fixation reactions with viral or rickettsial antigens require experience, but principles are the same as for the Wassermann test. Sera must be kept sterile and cold, and should be sent to the laboratory promptly.

At least 12 viral or rickettsial diseases can be diagnosed in the acute phase and often within a week. When smallpox or vaccinia is suspected, vesi-

<sup>1</sup> F. I. Horsfall, Jr., New York City, in *Bul. N. Y. Acad. of Med.*, Jan.

cle fluid is used for complement fixation with known immune serum.

For diagnosis of psittacosis, lymphogranuloma, or typhus—either epidemic or murine—at least two specimens of sera are withdrawn for complement fixation.

Influenza A or B viruses from the throat quickly reach high concentrations in chick embryos. Mumps virus is recovered from saliva, and herpes simplex from vesicle fluid. With training and skill, trachoma and inclusion conjunctivitis can be detected by the virus particles or elementary bodies in cells from the eye.

Some diseases are diagnosed by indirect methods. In 50 per cent of cases infectious mononucleosis produces heterophile antibodies that agglutinate sheep erythrocytes in fairly high titer, particularly during the second week of illness.

Primary atypical pneumonia produced one or two types of agglutinins in half the patients.

No specific tests are known for agents causing the common cold, infectious hepatitis, measles, rubella, varicella, exanthem subitum, phlebotomus fever, or herpes zoster.

Aureomycin and chloromycetin are astonishingly effective against epidemic, murine, or scrub typhus, Rocky Mountain spotted fever, Q fever, and rickettsialpox.

Lymphogranuloma venereum may be eradicated by aureomycin, chloromycetin, and sulfonamides; psittacosis by the first two agents and penicillin. Sulfonamides and penicillin are effective against trachoma, and sulfonamides against inclusion conjunctivitis.

The medium-size and small organisms responsible for most viral infections are not suppressed by antibiotics or chemicals. Aureomycin has been tried for atypical primary pneumonia but results have not been consistent.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., Editor, Charleston, S. C.

### HYPERTROPHY OF PYLORIC MUSCLE IN ADULT

GROSS HYPERTROPHY of the circular muscle occurs not infrequently in infants, but rarely in adults. The authors\* give a comprehensive review of the literature. No theory adequately explains all cases. The etiologic factor for both infant and adult forms is apparently the same. Subclinical degrees are recognized. The tumor persists in those cases treated medically and by gastroenterostomy. The Fredet-Ramstedt longitudinal division of the sphincter is the generally established surgical therapy for the infantile form. The Billroth I procedure is the recommended form of treatment in the adult type, both idiopathic and concomitant, since the

changes are localized to the pylorus and the duodenum is usually mobile. Three cases are reported. In one each pyloroplasty and gastroenterostomy failed, and in one Billroth I proved satisfactory.

McCann, J. C., and Dean, M. A.: *S. G. & O.*, Vol. 90:535, 1950.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### IMMUNIZATION OF YOUNG CHILDREN ESPECIALLY AGAINST WHOOPING COUGH

EVERY general doctor needs to keep up to date on immunization. Sauer<sup>1</sup> supplies the information.

The chief reason for early immunization of infants is to protect against pertussis; neither diphtheria nor tetanus is a health problem during the early months of life. One-half of all pertussis deaths occur before the 7th month. This requires the administration of potent pertussis vaccine in sufficient dosage, as early in life as basic immunity can be conferred—earlier than the 6th month, especially for many infants in cities and institutions. It is desirable to confer simultaneously basic immunity against diphtheria and tetanus. It is important that multiple antigens cause no untoward reactions; nor, when mixed, should one constituent lessen the antigenic potency of another. Most cases of tetanus encountered in pediatric practice occur from insignificant wounds. There is no natural immunity. For sustained protection after basic immunization against diphtheria, tetanus and pertussis, stimulating doses are necessary from time to time.

Twenty-five gauge, 10 to 15 mm. needles were used. Each dose of 0.5 ml. was administered deeply into alternate gluteal areas, starting with the left proximal region. To rid the needle tract of alum particles, each dose was terminated with 0.1 ml. of air. As soon as the needle was withdrawn, the site was massaged gently and briefly with sterile gauze to prevent oozing, and to distribute the alum-precipitated antigen into the deeper tissues.

Orders at the time of the first dose: no excess of bed covering, plenty of drinking water, little food at next meal. 1 gr. aspirin one or more times daily if fever occurred. Occasionally rectal t. 39° C. within 4 to 12 hours. It was not necessary to subdivide or delay a dose on account of systemic or local reaction. The preparation was not administered during an acute infection, or to prematurely-born infants, or to any child with a tendency to convulsions (such as spasms). In no instance\* did a child develop convulsions or show any signs

\*Pertussis vaccine (fluid and alum-precipitated) and multiple antigens (fluid and alum-precipitated) have been administered by one of us (L. W. S.) since 1925 to more than 15,000 infants and children without causing untoward reaction.

1. L. W. Sauer & W. H. Tucker, in *A. J. P. H.*, June.

of encephalopathy. In some infants a residual nodule could be palpated at the time of the subsequent dose. A fluctuating or discharging alum cyst was rare—once in 800 doses.

Three monthly doses of an alum-precipitated mixture of diphtheria toxoid and pertussis vaccine administered to 57 infants at 4, 5, and 6 months conferred adequate protection against diphtheria to 97 per cent, but in only 65 per cent against pertussis.

The mixture administered to 98 infants in 3 monthly doses after the age of 6 months conferred immunity against diphtheria in 100 per cent, against tetanus in 96 per cent, and against pertussis in 83 per cent.

The mixture administered to 163 infants in 4 monthly doses at the age of 3, 4, 5, and 6 months conferred protection against diphtheria to 86 per cent, to tetanus in 100 per cent, and to pertussis in 98 per cent.

Note: The authors are indebted to the Research and Biological Laboratories of Parke, Davis and Company (Detroit, Mich.) for supplying the alum-precipitated antigens used in this study and for performing the diphtheria and tetanus antitoxin determinations.

### EMERGENCY MANAGEMENT OF ACUTE, MASSIVE UPPER GASTROINTESTINAL HEMORRHAGE

THE PATIENT who suddenly vomits blood or passes a large tarry stool presents an urgent problem, but there is comfort in the fact that most of these acute hemorrhages subside spontaneously.

Hoerr presents this subject in a practical fashion.<sup>1</sup>

Is the bleeding so rapid that death is threatened? Elaborate aids are unnecessary for deciding this point; clinical evidences of shock—weakness, pallor, a weak, rapid pulse, and cool, damp extremities—bespeak a serious and rapid loss of blood, to be met by prompt blood transfusion. A patient who is warm and has a slow full pulse is safe. Prompt improvement follows simple recumbency. If doubt persists, it is far better to give transfusion.

If the patient is in pain, demerol will be preferable to morphine, since it does not increase gastrointestinal tonus. Fears are best allayed with a barbiturate. An ulcer-type diet with non-absorbable alkalis is to be started almost at once if the patient has not been vomiting. Such a feeding regimen is beneficial if the lesion is a peptic ulcer or gastritis (which together account for about 80 per cent of all cases of massive upper gastrointestinal hemorrhage), and will not be harmful if the bleeding is due to some other cause. If the patient is retching and vomiting, the stomach should be kept empty by means of constant suction through a Levine tube. Ice is not to be applied to the epigastrium because to do so would increase gastric motility.

1. S. O. Hoerr, Cleveland, in *Ohio Medical J.*, July.



The selection of the patient who will die without an operation can rarely be made within the first six or eight hours. In many cases bleeding continues for some hours after treatment is first started, and fairly brisk hemorrhages lasting for several days may still cease spontaneously.

A useful plan for observation: 1) A chart of the p. and b. p. at intervals of 15 to 60 min. Call doctor if p. exceeds 120 or systolic b. p. falls below 100.

2) A determination of total erythrocytes, hemoglobin and hematocrit q. 8 h. day and night. Progressive drops will indicate either inadequate blood replacement, or persisting hemorrhage, or both. Some hemodilution is to be expected for 24 hours after cessation of bleeding.

3) The bedside appraisal of the patient at intervals not to exceed eight hours for the first day.

A pint of blood is given q. 8 h., if the patient's condition demands it; if this much blood fails to maintain circulatory equilibrium, emergency surgery is to be planned.

Most of these hemorrhages subside under conservative management irrespective of the source of the bleeding.

## INTERNAL MEDICINE

GEORGE R. WILKINSON, M.D., *Editor*, Greenville, S. C.

### THE GENESIS OF PEPTIC ULCERATION

THE GREAT PREVALENCE of peptic ulcer and its propensity to chronicity and recurrence make it a subject of constant concern.

Aird<sup>1</sup> has made a contribution to the subject of more than passing interest. First he calls attention to the tremendous increase in the number of cases to occur in certain localities, from no satisfactory ascribable cause.

Aird says there has been a considerable increase of peptic ulcer since the end of the first world war and probably a greater increase in men past 40. Illingworth (1944) has shown that perforated peptic ulcer was almost unknown in Glasgow before 1890, but then began an increase which reached a peak in 1940-41 by a final steep rise, falling somewhat thereafter; the peak was reached and passed just before the first heavy air attack on the city. In 1924 there were 191 perforations in Glasgow; in 1941 there were 615—the population remaining fairly constant. This Glasgow increase has affected duodenal ulcer almost exclusively; the incidence of gastric ulcer has not greatly altered throughout the period.

Among Tidy's London patients (year 1945), gastric ulcer has been commoner than duodenal, but its preponderance has fallen gradually from 2.7

to 1.9. The incidence of gastric ulcer in men over 40 rose slowly in the teens of the century, doubled in the twenties, and has remained stationary since, while in men under 40 the trend has been much less dramatic.

In the twenties, the commonest site of a duodenal ulcer coming to operation was the anterior wall of the first part, which lent itself to excision and pyloroplasty. Aird has not since the war seen an unperforated ulcer of the anterior wall of the duodenum which could have been excised. No explanation appears of the remarkably increased frequency of posterior wall ulcer of the duodenum. Bleeding ulcers of the duodenum are always posterior though they may be accompanied by an anterior wall ulcer, or the whole circumference of the duodenum may be ulcerated, as it sometimes is when bleeding and perforation occur together. It may be that anterior wall ulcer of the duodenum is always acute, perforating before it can become chronic. Illingworth's figures concern perforation of the free wall, not chronic ulcer of the posterior wall, of the duodenum.

In the 10 years before the last war there were 43,000 deaths registered from peptic ulcer in England and Wales.

The high incidence of peptic ulcer in uremia and septicemia is well known.

Duodenal ulcer is more likely to occur in patients who have a high acid value in their stomach content.

The muscle spasm and hyperacidity of ulcer patients are partly dependent on psychological influences. It is common knowledge that the duodenal ulcer is "left at the office stool"; that the bank manager's dyspepsia is greatest at the time of his annual balance. There is available now evidence that nervous influences, initiated below the psychological plane, may produce peptic ulceration.

That either a dietetic or a racial factor, or both, is important in the genesis of ulcer is implicit in the observation of McCarrison that the incidence of peptic ulcer is 58 times commoner in South India than in North India.

The following conclusions may reasonably be drawn:

Duodenal ulcer is more likely to occur in hyperchlorhydric than in normal subjects; it does not affect the achlorhydric patient.

A normal or strongly acid gastric content and hypermotility are probably both necessary for the production of a duodenal ulcer.

Hyperacidity and hypermotility may both be produced by central nervous influences operating probably through vagal channels.

Gastric ulceration probably differs in its genesis from duodenal ulceration. It occurs in a different type of individual, and it may occur in a hyper-

<sup>1</sup> Ian Aird, Univ. of London, in *Edinburgh Med. J.*, Mar.



chlorhydric or apparently achlorhydric stomach.

The almost universal location of peptic ulceration either on the lesser curvature or in the first part of the duodenum, and the apparent immunity of the remainder of the mucosa even of the hyperchlorhydric stomach, must be explicable by local peculiarities of motility, cellular protection, or chemical buffering which are not at present understood. It is significant that ulceration is commonest, not in a mucosa which secretes a high concentration of acid, but in such adjacent mucosa as that of the lesser curvature, duodenum, jejunum (after gastro-jejunostomy), esophagus (in short esophagus and in relation to heterotopic oxyntic cells) and ileal mucosa adjacent to heterotopic gastric epithelium in a Meckel's diverticulum.

Lastly it should be added that the hypersecretion, and presumably the hypermotility, which seems to be related to the genesis of duodenal ulcer is not the hormone-induced response to food, but the vagal overaction during sleep, which is reflected by the high night secretion of duodenal ulcer subjects, and the hypersensitivity of the parasympathetic centres to hypoglycemia, which is reflected sometimes in the curve of the insulin test meal.

I have wondered if the English habit of taking tea—a light lunch—between lunch and dinner reduced the incidence of peptic ulcer. Probably too few of the population observe this habit.

I would love to see the figures on peptic ulcer incidence in a population which habitually took a substantial lunch halfway between breakfast and lunch, halfway between lunch and dinner, and before going to bed.—*J. M. N.*

## PEDIATRICS

ALBERT M. EDMONDS, M.D., *Editor*, Richmond, Va.

### DIAGNOSIS AND TREATMENT OF CELIAC DISEASE

AN emaciated child with distended abdomen, who is unable to stand or sometimes even to sit; a stunted child presenting all the symptoms of avitaminosis, edema and anemia; a child with a long history of months or years of gastrointestinal disturbance, frequent stools that are large, pale, oily, and foul. In such cases the picture is clear.

A history of anorexia, prolonged diarrhea, with intervals of weeks or months during which the child does fairly well but does not grow normally—such a history should suggest celiac disease. It is necessary to make sure that there are no intestinal parasites and to exclude dysentery organisms, amebae and tuberculous peritonitis, gastrointestinal anomalies or obstructions.

Haas and Haas<sup>1</sup> say further:

The only positive diagnosis is response to the specific carbohydrate diet.

One quart milk is warmed to 98°. To this add 1 tablespoon essence of pepsin. Allow to drain through cheesecloth for ½ hour to separate whey from curd. Mix curd with 1 pint of water, then rub through a fine-wire strainer several times, add to it 1 pint buttermilk. The whey, which contains most of the sugar, discard.

The basis of the diet is ripe banana and protein milk prepared as follows:

When the child will not drink protein milk, calcium caseinate milk may be used.

Calcium caseinate milk: Use 4 to 6 tablespoons of calcium caseinate (Mead Johnson's Case) to 1 pint of water and 1 pint of milk. Mix the Case with a little cold water (enough to form a smooth paste), pour in the remainder of the cold water. Then pour in the milk and bring the whole mixture to a boil while stirring constantly, then boil actively for one minute. Remove from fire. Let cool. If necessary to sweeten, use one or two tablets of saccharin (1 gr.)

Although all fruits may be used later, banana is the most satisfactory and the only safe fruit to be used at the outset of treatment. It is 20 per cent carbohydrate and thus replaces better than any other fruit, cereals, sugars and potatoes. It may be served raw or baked. Only fully ripe bananas should be given, the skin well speckled with brown, the edible portion soft enough to mash easily.

If ripe bananas are not available, banana powder may be substituted.

The specific carbohydrate diet, in addition to protein milk and fruits, may contain proteins in any form and fats in moderate quantities. Thus meat, fish and fowl of any kind may be used, and it is not advisable to have all the fat removed. Any cheese in its initial form, Swiss, cheddar, American, and of course pot cheese.

Desserts made from pure gelatine, fruit juice, and saccharin for sweetening are well tolerated; honey, dates and raisins as confections, but dates packed in sugar syrup should not be used.

When brisk diarrhea is controlled, egg is added to the diet. And when the stools are formed and occur no more than two or three times daily, vegetables are given. But they must be added to the diet cautiously, one at a time with a sufficient period between each new introduction to determine their effect. In general, lettuce, tomato, string beans, squash and carrots are well tolerated. Canned vegetables are not used because many have sugar added. Potato may not be used.

Fats in meats in the normal amounts, of butter, and of protein milk are well borne. Sour cream is usually tolerated. The only restriction on fats may come at the beginning of the diet, but when a full and well-rounded diet has been established there need be no restrictions of fat beyond that usually exercised in the diet of healthy children.

1. S. V. Haas and M. P. Haas, New York City, in April issue of *Postgraduate Medicine*.

Since this diet is full and well-balanced, it is continued for at least one year, supplemented by certain vitamins.

—47 W. 86th Street

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### SURGICAL MANAGEMENT OF THE AGED

SINCE so large a number subjected to urologic surgery are well past middle life, an article on surgical management of the aged<sup>1</sup> is abstracted as of special interest to readers of this department.

During the 30 months prior to June, 1949, 1,609 patients were admitted to 32 surgical beds of one surgical unit at a London teaching hospital. Of these 131 who were over the age of 70, 7 were not submitted to surgery, 24 to minor surgery, and 99 to major surgery.

Of these 99 those having

Gross hypertension (i.e., b. p. 180/100 or more) numbered .....	14
Hypertension or signs of myocardial insufficiency .....	13
Signs of myocardial insufficiency .....	6
Hypertension and/or myocardial insufficiency and evidences of respiratory disease.....	15
Respiratory disease alone .....	12

In addition, arteriosclerosis, anaemia, and wasting were very common findings.

All these patients received a hypo. of 1/100 gr. atropine half an hour before operation. In addition, those with marked pain received 1, 6 gr. morphine.

Curare and light ether anesthesia were used in 55 cases.

Old people are prone to osteoarthritis, and their skins withstand pressure badly; their position on the operating table must be carefully supervised, a support provided for the back, shoulder-pieces must be well padded, and hands must not be placed under the buttocks.

Patients suffering from preoperative shock or dehydration were given blood or saline throughout the operation. If a long operation was anticipated a slow blood drip was started at the beginning. If signs of shock developed during an operation blood or plasma was administered. All such cases returned from the theatre to the ward with their intravenous drips still running.

As soon as the patient was sufficiently recovered from the anaesthetic, he or she was sat up and encouraged to cough, to take deep breaths, and to move the legs. Five-minute inhalations of carhogen every hour proved useful. Within 12 hours of operation in all cases in which it was practicable the patient was sat up in a chair. Where the likelihood of respiratory complications was great, even pa-

tients undergoing gastric suction and intravenous drip therapy, sat in a chair for increasing periods each from then on. Continuous gastric suction and intravenous therapy were practised for 48 hours after operation in all cases after abdominal operation which might result in paralytic ileus. Intravenous therapy and suction were stopped only when intestinal movements were well established. Watch was kept over the bladder for 24 hours to ensure that retention with overflow did not occur, then catheterization if necessary. Where retention was persistent and due to prostatic hypertrophy, an indwelling catheter was used until the patient was considered fit for a transurethral resection, and penicillin or a sulphonamide was administered. Routine testing of urine for chlorides was practised from the first postoperative day.

All drugs given preoperatively were continued in the postoperative period—i.e., penicillin, sulphonamides, or digitalis. In all major abdominal procedures, and where sepsis was a danger, prophylactic penicillin and sulphonamides were administered. Where cardiovascular complications occurred digitalization was instituted. In all cases of respiratory complications and in those in which coughing was difficult owing to tenacious sputum, *mistura sodii chloridi composita* proved invaluable.

Of the 17 who died, pneumonia caused the death of 2, brown atrophy of heart muscle of 1, hypertensive heart failure of 3, congestive heart failure of 2; terminal bronchopneumonia of 1; general peritonitis of 2, carcinoma or carcinomatosis of 5. In one case no cause could be ascribed.

## PROCTOLOGY

RUSSELL BUXTON, M.D., *Editor*, Newport News, Va.

### PROCTOLOGY IN INFANTS AND CHILDREN

PROCTOLOGICAL problems in infants and childhood are common enough to warrant all practitioners, surgeons and pediatricians to be on the lookout for these conditions which may be easily overlooked.

In the newborn, atresia of the rectum is not uncommon and is usually discovered by the mother or nurse within 24 or 48 hours when it is noticed that the child has no stools. The treatment for this is operative, and may be simple or exceedingly difficult, depending upon whether there is an extensive or minimal deficiency of bowel. In the cases in which there is only a septum, the operative treatment is simple and the result is usually quite satisfactory. In order to determine the depth of the septum, a lead marker may be placed at the anal dimple and the infant is then inverted and x-rayed. This distance between the gas in the rec-

1. Peter Childs & S. A. Mason, in *British Med. J.*, Dec, 17, 1949.

tum and the marker as shown in the x-ray film, is an excellent guide as to the thickness of the septum. By this means, it may be determined whether the operation can be done from below or whether a colostomy is necessary.

Blood in the stool of an infant may indicate a fissure and a rectal examination is always indicated in the presence of bleeding. Bleeding may also come from polypi which may be found by proctoscopic examination and sometime by barium enema if higher in the colon. Anorectal stricture is often overlooked as a cause of constipation and colic in infants. It is an incomplete form of congenital atresia and can easily be found by rectal examination. The examining surgeon feels a tight ring 1 or 2 cm. above the rectal opening which feels like a wire. The treatment is rectal dilatation at frequent intervals over a period of time.

Intussusception occurs somewhat later in infancy and is characterized by colic, vomiting, distention and bloody mucus in the stools or on the examining finger. Although many different schemes have been devised to treat intussusception medically, it is still a surgical problem and operation is indicated as soon as the diagnosis is made. A few cases will require resection, but in most of them, if the operation is done early, the intussusception can be reduced. The prognosis is reasonably good if the operation is done before the bowel becomes gangrenous.

(To be concluded)

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### ANKLE SPRAIN OR LIGAMENTOUS FRACTURE OF THE ANKLE

A LARGE GROUP of "ankle sprains" are serious: described as "tibiofibular diastasis," "tibiofibular sprain," momentary "dislocation of the astragalus" and "ligamentous fractures of the ankle." Hudson<sup>1</sup> says such a case should be classified as "fracture of the ankle with negative x-ray examination," and goes on:

The history is a sudden torsion strain followed by severe pain. Examination within an hour reveals marked antero-lateral swelling over the lower tibiofibular joint, limitation of motion, no inversion, heel held in valgus, and an unstable ankle with lateral rocking of the astragalus. Routine roentgenograms are negative: an A-P made with forced inversion of the foot and varus of the heel, shows lateral rotation of the astragalus within the ankle mortise.

Hours after injury there is exaggeration of findings—heel held in valgus, extreme peroneal spasm,

severe pain on attempt to bring the heel to a neutral position. The diagnosis can be made by the clinical examination.

Plaster immobilization is necessary, but does not relieve the spasm and pain for long. The peroneal spasm keeps pulling the foot against the plaster. Subcutaneous section of the peroneal tendons under local anesthesia gives the patient immediate comfort.

Hudson's treatment is now subcutaneous tenotomy of the peroneal tendons and immobilization in a long leg plaster cast for six weeks, then a plaster boot for four weeks, and with a plaster boot (renewed) for four more weeks. Weight-bearing is permitted after four weeks in plaster.

The majority of the peroneal tendons function well when the plaster is removed. The ankle is stable and the astragalus cannot be rotated in the mortise.

In general practice, one would need such backing up by an authority, to make a patient content to wear plaster supports for 14 weeks in treatment of an "ankle sprain," however severe and by whatever name.

### FRACTURES OF THE FOREARM AND WRIST

FRACTURES involving wrist and forearm together constitute 20 per cent of all fractures.

The most common carpal injury is fracture of the carpal navicular, diagnosed by lessened functional use of the wrist and hand, local swelling and pain in the carpus, and tenderness in the snuff-box. Verification is necessary by x-rays in at least three planes. The earlier the treatment, the better the prognosis; therefore all carpal injuries should be subjected to roentgen examination.

Speed<sup>1</sup> directs attention to these facts and elaborates the theme.

As soon as the diagnosis is made, if fragments are displaced and no carpal dislocation, gentle traction manipulation under anesthesia to slight dorsal and radial flexion of the hand is indicated. This is followed by a roentgenogram to assure approximation of fragments while the hand is held steadily and quietly.

A lightly padded plaster encasement covers the thumb to its tip, the metacarp., wrist and the forearm nearly to the elbow, worn at least seven weeks; then x-rayed through the plaster. If union is shown, the splint is removed. If no bony union seen splint is removed without moving the wrist, and if a second x-ray shows no union, a second encasement is worn for seven weeks.

Carpal bones heal slowly; nonunion frequently follows fracture except in the distal row.

Fractures of one or both forearm bones at the

<sup>1</sup> Kellogg Speed, Chicago, in *Modern Medicine*, May 15th.

<sup>2</sup> O. C. Hudson, Hempstead, N. Y., in *Medical Times*, July.



wrist nearly always cause obvious deformity, tenderness, interference with hand and forearm function.

The doctor must assure himself there is no nerve injury and that all tendons are intact.

Reduction is done quickly under brief anesthesia. Some displacements are easily reduced by continuous traction on the hand, the forearm being flexed over a suitable padded bar; local anesthesia is used. A plaster dressing is applied delicately without disturbance of fragments, lightly padded from the base of the fingers to the lower part of the arm, covering the flexed elbow at right angles. Extra padding may well be applied over the styloid processes. This left on at least six weeks. In any event, a second supporting splint, dorsal or volar, molded of suitable material, should be worn for four to six weeks more.

The finger joints are left free, moved during the splint-wearing period. In aftercare frequently warn against forcible dorsiflexion of the wrist. Important are warm oil soaks of the hand, active manipulation of fingers, gentle massage of digital joints, and use of a golf ball for squeeze exercise.

Parents should be warned that even after perfect reduction epiphyseal separations in adolescents may lead to growth stoppages. In fractures of the forearm bones in their shafts: preserve full length; correct axial alignment in all planes; sustain apposition of the fractured surfaces.

In 41 fractures of both bones of the forearm in adults, treated by manipulation, results were satisfactory in 29 per cent, with five instances of nonunion. Forearm bones will not solidly unite under 4½ to 5 months, and one of the greatest errors in treatment is too short a period of supportive splintage. Open reductions in 20 cases using plate fixation showed satisfactory results in 35 per cent, three instances of nonunion in the ulna alone. Only bone grafts gave good results.

If old principles are persisted in and used to their full intent, operation may not be required in a high percentage of such injuries.

If satisfactory results are to be expected in no more than 35 per cent of cases of fracture of both bones of the forearm, however and by whomsoever treated, it seems plain that the general practitioner should allow the surgeon to take the blame for the at least 65 per cent unsatisfactory, especially since the surgeon will be judged far more mercifully.

#### LEADING CAUSES OF CHILDHOOD DEATH

CLARK<sup>1</sup> calls attention to some startling figures on child mortality in one State, which probably may be accepted for all States.

The total rates of death in childhood decreased five- to ten-fold during the first half of the century, the greatest drop in deaths due to infections. The death rate due to accidents has shown a slight decrease; hence, accidents are

1. Esther B. Clark, Palo Alto, in *California Medicine*, July.

now the leading cause of childhood death, California accounting for 32 per cent of the deaths in the group one to 15 years of age.

It seems that cancer is the leading or second leading cause of death due to disease in childhood. There is indication that the incidence of leukemia is increasing in early childhood and in the older age groups.

Accidents, the leading cause of childhood death, do not happen; they are caused, and so can be prevented. The medical profession should concern itself much more actively with accident prevention.

#### Deaths for the Five Leading Causes—United States (per 100,000 estimated population)

Age under One Year	
All causes .....	3,373
Premature births .....	1,162
Congenital malformation .....	483
Pneumonia .....	374
Injury at birth .....	370
Asphyxia .....	163
Age 1-4 Years	
All causes .....	159
Pneumonia .....	25
Tuberculosis .....	7
Accidents, non-motor .....	30
Congenital malformations .....	13
Motor vehicle accidents .....	12
Age 5-14 Years	
All causes .....	69
Pneumonia .....	4
Diseases of heart .....	4
Accidents, non-motor .....	17
Motor vehicle accidents .....	10
Cancer .....	3

Dr. Harry F. Dietrich agrees with everything that Dr. Clark has said, except that smothering is an important cause of death. He has never known of a well baby smothering. Infants, however, have been actually strangled by contraptions used to prevent smothering. He believes that the 1,400 deaths from smothering indicated on Dr. Clark's chart represent the same coroners' mistakes that keep the thymic myth alive—insufficient or inadequate necropsies. Bowden in Australia recently studied 40 cases of alleged smothering, and in every instance found some other valid cause for death. He suggested that what we need is not the proposed "Foundation for the Prevention of Smothering," but a "Society for the Performance of More and Better Necropsies."

#### OXYGEN AS A SUPPORTIVE THERAPY IN FETAL ANOXIA (Virginia Appgar, New York City, in *Bull. N. Y. Acad. Med.*, July)

During the past 20 years, there has been almost no decrease in the deaths during the first 24 hours after birth. At the time of delivery, an infant who is apneic, breathes feebly or with occasional deep gasps, needs O. The presence of cyanosis, pallor, flaccidity and bradycardia merely corroborates this need. The use of gravity and gentle pharyngeal suction should precede the administration of O. Actual pulmonary inflation can be obtained in countless ways, from the ever-available mouth-to-mouth insufflation to the latest mechanical device.

#### HOARSENESS

(T. E. Douglas, Jr., Philadelphia, in *Northwest Med.*, June)

Too often patients are treated symptomatically for laryngitis by penicillin injections, croup inhalations, vocal rest and stopping smoking. Patient finally wanders into another doctor's office, only to discover that his laryngitis is, in reality, carcinoma, papilloma, polyposis, leucic or t. b. infection, or any of numerous other disease entities.



## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### LET'S RECOGNIZE THE INEVITABLE

HOSPITAL OPERATORS, whether the hospital be privately owned, or supported by a sect or a philanthropy, or by taxation, are all confronted with the nursing shortage, varying from ten to thirty per cent. This shortage is no surprise to anyone who has taken the time to study the situation that has been developing for the last ten or fifteen years in regard to nursing education.

Those hospitals least affected are the large institutions that have training schools. Therefore, the officials of these institutions are not as much concerned about the nursing shortage as the operators of medium-size and smaller hospitals. The reason is obvious, the larger hospitals operate a training school, and while the training school may be an expense in one sense of the word, it does relieve the nursing on the hall to a very large extent. But the large institutions are in line for the same difficulty as the small institutions are now experiencing. The reason being that the leaders in the field of nursing education fail to recognize the greater value of practical training than of an excess of "educational credits," and so are demanding less time in practical nursing on the hospital halls and more time in the class room and laboratory. The fact is that they are pushing for a B.S. or B.A. degree before the student is accepted for the nursing course. I venture to predict that the operators of the larger hospitals will find themselves, in the very near future, just as helpless as capitalists have found themselves when confronted by the extortions of "Labor" unions, backed up by the Roosevelt-Truman tyranny. It behooves them, therefore, to join forces with the smaller institutions, and fight for the kind of nursing education that qualifies for best nursing service to the sick individual, at a price in keeping with the income of the average person.

Hospitals were started for this purpose, and for this purpose alone. If the education of the nurses is not too expensive and the opportunity to receive this knowledge is available to young women, the supply of nursing service will be adequately met. The foregoing sentence is the crux of the whole situation.

Since the big hospitals are showing no concern over this nearwrecking of the smaller institutions, the latter must band themselves together if they are to survive. Secondly, they must make up their minds to avail themselves of the services of a large number of practical nurses for whose training they must establish and conduct schools for giving training in practical nursing. If the present state re-

quirements are too expensive for the smaller institutions to operate, although I do not think they are, then they shall have to institute a more economical training and then pledge themselves to use these nurses first when they are available. This will encourage and insure their continuous employment at a reasonable salary whether the country is in a depression or an inflation.

The author knows of no hospital whose increase in nursing salaries in the last ten years has not far exceeded the increase in room and board to the patient. This is not intended for criticism of the nursing profession as a whole but it is intended to help to point out that the inevitable is, less nursing at a higher salary which is beyond most people's reach, or more nursing at a reasonable salary which is what the public feels they are due from the medical and nursing profession. Those who think wisely know the answer, but refuse to act because procrastination plays such a dominant part in our American way of thinking. One dictator in any country could have foreseen this catastrophe years ago, and would have taken steps to prevent it, although to our democratic way of life it would not have been the type of remedy that we now hope for.

## RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M.D., *Editor*, Charleston, S. C.

### TONSILLECTOMY AND POLIOMYELITIS

SINCE the first written observation on the poliomyelitis-tonsillectomy relationship in 1910, a mass of evidence has been presented with varying interpretations depending largely on the viewpoint of the interpreter. Out of all of the writings on the subject one gets two fairly clean-cut impressions: that tonsillectomy and adenoidectomy neither increases nor decreases the over-all incidence of poliomyelitis, but that the operation when performed upon an individual who is already embarked upon the incubation of poliomyelitis may increase the chance of bulbar involvement.

A severe epidemic of poliomyelitis which occurred in Southwestern Iowa is reported<sup>1</sup> and attempt made to learn what, if any, influence tonsillectomy has on incidence or mortality of poliomyelitis. First notice of the serious months ahead was an explosive outbreak in western Harrison County following a school picnic in late May. Within a short time an epidemic had spread southward along the Missouri Valley and to the east and north along the Soldier and Boyer Rivers. In 1948, three counties produced the majority of 298 cases of clinical poliomyelitis in Southwestern Iowa. In the 1949 epidemic poliomyelitis again appeared in the same area and to the south and east. By the end

1. J. V. Treynor, M.D., Council Bluffs, in *Jl. Iowa Med. Soc.*, Aug.

of the 1948-9 period 374 cases of poliomyelitis had been hospitalized from the Eleventh Health District.

It is hoped that additional information may be derived from the figures to be presented, which are tabulated in as completely objective fashion as is possible. Listed as tonsillectomy are all cases of tonsillectomy alone, adenoidectomy alone and adeno-tonsillectomy. All cases of polio-encephalitis, bulbo spinal and bulbar poliomyelitis are listed as bulbar. The year 1947 is used as control, and in all cases of bulbar poliomyelitis the question of tonsillectomy has been checked by individual letter.

Out of these figures I can extract no information which would suggest any causal relationship between tonsillectomy and poliomyelitis. Of course, it can be objected that in zone I during the critical months of July, August and September the number of tonsillectomies performed was below average, and that, had the usual number been performed during these months, some significant figures might have appeared. Such an objection can neither be refuted nor sustained.

Several writers have advanced figures which seem to show an increased susceptibility to polio in tonsillectomized individuals regardless of the date of operation. The percentage of tonsillectomized among all cases of poliomyelitis regardless of type is approximately the same as the percentage of tonsillectomized juveniles at large. The percentage of tonsillectomized among the bulbar cases does seem disproportionately large until the unusually high average age is taken into consideration. At this age between 40 and 50 per cent of the population should be expected to have had tonsillectomies.

In the epidemic of poliomyelitis in Southwestern Iowa in 1948 and 1949, in which there were 374 hospitalized cases, 45 of which were bulbar, no connection can be demonstrated between tonsillectomy and poliomyelitis, spinal or bulbar. The figures have been broken down so as to bring into focus the most actively involved area in the most critical months, but even so no apparent connection can be made to appear.

It is difficult to reconcile this report with that of Anderson and with those of Aycock and the Toronto group. Possibly in another epidemic of equal severity their experience might be duplicated. Possibly in this epidemic we were dealing with an organism with no special affinity for the upper nervous system or with one which spent its invasive period in the gastrointestinal tract instead of in the nasopharynx and was given no new impetus by tonsillectomy. Conceivably, our population in Southwestern Iowa may have a high enough immune titer to withstand the more serious aspects of poliomyelitis, particularly in urban areas where

the actual case rate and bulbar case rate were low. Perhaps more tonsillectomies in areas of less mass immunity might have resulted in more bulbar infections. These things one can speculate upon but cannot prove.

The one certain thing in our minds which has emerged from this survey is the conviction that all such studies must be broken down into small enough units to make possible accurate investigation of every pertinent case. Had this report depended solely on hospital or office records, as most investigations apparently have been, at least two of the three cases of polio following tonsillectomy would not have appeared. The only other worthwhile conclusion is that none of the surveys reported to date, including this one, can be taken as final evidence that tonsillectomy does, or does not, influence the incidence of polio of any type.

#### BANTHINE FOR PEPTIC ULCER

(K. S. Grimson et al., Durham, N. C., in *J. A. M. A.*)

The synthetic chemical, Banthine, taken in tablet form, blocks the impulses of the nervous system which stimulate overactivity and overacidity of the stomach. It is available only on prescription by a physician and must be taken under medical supervision.

Clinical trial was made of banthine in 100 peptic-ulcer patients, 62 considered to have "conventional indications for surgery" before treatment with Banthine was begun. Surgery was performed on five because of development of scar tissue or other special indications. Most of the patients were limiting their activity, restricting diet and using antacids before their trial of banthine. During treatment they were advised to discontinue use of antacids; with few exceptions, they were encouraged gradually to return to work and resume a normal diet during the first week or two of treatment.

With the exception of two patients, members of this group have continued, or returned to, regular work. Pain of ulcer usually is relieved completely before healing can occur.

It is our opinion that banthine is a medical treatment better than that heretofore available and that need for surgery will materially decrease. Perhaps scar tissue development can be prevented by prophylactic use of a simple treatment such as banthine. However, obstruction already present to a pronounced degree may lead to failure of banthine therapy and need for surgical intervention.

#### DIGESTIVE UPSET DUE TO RENAL DISEASE

The sole manifestation of an obstructive renal syndrome may be a digestive upset (indigestion, flatulence, belching, nausea). The kidneys and the intestinal tract have a common nerve supply. Urinalysis may be normal. Many serious urologic lesions may exist and urine examination disclose nothing abnormal.—Henline, *South Med. J.*

#### HEAD INJURY IN THE CHILD

The child whose head is bumped or otherwise injured should be carefully watched for: 1. A period of apparently normal behavior. 2. later development of stupor or coma or convulsions, fever, dilatation of one pupil, any of which indicate that an extradural brain hemorrhage is developing. Immediate neurosurgery is needed, with removal of the clot, if a 50 per cent death rate is to be avoided.—Barnes Woodhall, M.D., in *Southern Med. J.*

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WHAT EVERY DOCTOR SHOULD KNOW  
ABOUT THE DEFENSE AGAINST  
THE ATOMIC BOMB

IT IS TO BE EARNESTLY HOPED that there is no probability of doctors generally needing to know the means of defense against the atomic bomb; that there is such possibility is certain.

In view of this possibility Steele et al.<sup>1</sup> have written for the instruction of the doctors of Maine, and what they say is passed on to doctors farther down the Atlantic coast.

Shock or blast damage is the compressive and tearing action of the shock wave on the human body. Underground shelters and normal reinforced concrete buildings provide the most effective protection against the atomic bomb blast very close to the point of detonation.

In event there is some advance warning of an atomic detonation lie flat on the floor or ground; if possible, get into underground or especially constructed and reinforced shelters. Very little of the air blast is transmitted through the ground and into basements or into underground shelters.

Light-colored clothing reflects almost all radiation and is much superior. Flame burns were produced by fires started in the inflammable materials in wrecked buildings. Build out of less inflammable materials, fireproof furniture, upholstery, rugs, etc. Large quantities of adequate fire-fighting equipment should be made available and large numbers of auxiliary firemen should be trained. This fire-fighting equipment and personnel should be widely dispersed to insure that few vital elements in the defense organization are destroyed by a single atomic detonation.

Estimates of the number of casualties which would result from the detonation of an atomic bomb high in the air above a city of a quarter of a million persons are in the 10's of thousands; one-half lethal, the other half shock injuries of various types, fractures, burns and radiation injuries. Each individual civilian and soldier in such a city should be trained in what he can do for himself after the detonation occurs. Large numbers of persons, civilian and military, must be educated for special jobs in atomic warfare and this education will probably be given to such people as radiologic safety personnel, medical officers, civilian doctors and civilian defense technicians. The psychological preparation that will be attained in the population will be determined to a large extent by the individual indoctrination and the specialized training given. It is essential that the proper degree of knowledge be imparted to all so that each individual will have a respect for the special hazards of atomic warfare, and so the panicky fear be prevented.

1. C. W. Steele et al., in *Jl. Maine Medical Assn.*, July.



Large-scale training of fire fighters, evacuation and first-aid personnel, and decontamination groups must be included in the Civil Defense and Public Safety Program. Large stocks of food supplies, medical supplies and disaster equipment should be accumulated in safe locations. Mutual aid agreements between cities will be needed and should be drawn up and approved. Civil and military groups alike must be equipped and trained in the detection and isolation of contaminated areas. Since this new hazard of nuclear radiation cannot be detected by any of the physical senses, special instruments such as Geiger counters, radio sets, film strips, etc., will be required. With a few minutes advance warning of an attack and sufficient indoctrination, possibly 50 per cent saving in casualties can be effected.

Active defense will be primary concern of our armed forces; and the basic responsibility of our military organizations require that they assume that war will occur. In the case of atomic warfare this will consist of extensive stock-piling of all weapons including atomic bombs and of maintaining in readiness our retaliation forces.

Advance warning of an impending enemy attack is of paramount importance. The principal element of our preparation for possible surprise attack is an intelligence system of high effectiveness, capable of warning the government and the department of defense well in advance if an attack is being prepared.

Our authorities have stated their belief that guided missiles could not be used to carry an atomic bomb for at least another eight years. Therefore, it would appear that manned aircraft would be used for transporting atomic or hydrogen bombs over intended targets during this ensuing eight-year period.

In the past there has been only a fair degree of success in the interception of bomber aircraft on missions. Articles in the press have, until recently, given support to the belief that the interception of an atomic bomb carrier would be nigh onto impossible. Recently, however, such an eminent authority as Mr. Vannevar Bush has pointed out reasons why bombers will have it tougher in the future. Fortunately, from the active defense point of view, the days of mass bombing may very soon have reached their end.

To penetrate a defense equipped with an early-warning radar screen, jet fighters armed with rocket missiles, ground controlled guided missiles propelled by ram-jet engines which can be fired from a gun and which are equipped with complex homing devices to bring them to the point where the proximity fuse in the nose will detonate them with lethal effect will constitute an appalling task for any enemy bomber fleet. With all these new

defenses weapons at our disposal, and in sufficient quantity, it should be possible to intercept or to shoot down almost 100 per cent of the high altitude enemy bombers before they could reach their targets.

The advent of the proximity fuse which contains a small radio set in the nose that triggers the shell at a predetermined distance about the ground, has increased the effectiveness of artillery against personnel in the open by perhaps as much as ten times—gain equivalent to having 10 times as much artillery at work. The light rocket-firing bazooka and the new inexpensive, but powerful and easily movable recoilless gun have added greatly to the effectiveness of the defending forces.

There would now appear to be no scientific reason why our degree of interception of long-range enemy bombers, or of long range enemy-guided missiles, cannot be raised to nearly 100 per cent if sufficient money, time and technical ability are put on mastering these problems.

Atomic and hydrogen bomb warfare presents a truly horrible outlook. It is our duty to remain ever alert and at all times adequately prepared to meet any enemy attack from without or within our borders and to push to the utmost any procedure that could possibly reduce the effectiveness of such an attack against us.

An efficient Civil Defense and Public Safety Organization should go far toward maintaining civilian morale and guaranteeing the internal security of our nation against enemies both from within and without our borders. Therefore, it is hoped that every Maine physician will measure his obligations toward the future, will accept his responsibility for the safety and for the survival of the great masses of the population, if a new conflict should come; and will cooperate wholeheartedly in a steady improvement of the defenses which must be prepared and the technological preparations which must be made.

#### COMPARISON OF EFFECTIVENESS OF VARIOUS ANTACIDS ON GASTRIC ACIDITY

OUR OWN GARDEN OKRA HAS NO SUPERIOR

WE HEAR many claims and counterclaims as to which antacid is most effective. Each claimant loud for his own choice of remedy. A trio of Cook County investigators<sup>1</sup> report on a series of trials, with results which can not fail to interest us all.

A study was conducted on 28 patients, each being tested on four to six successive mornings. Nineteen of the patients had peptic ulcers (14 duodenal and five gastric), proven by x-ray, gastroscopy and/or surgery. Of the remaining nine

1. S. Krasnow et al., Chicago, in *Amer. J. Digestive Diseases*, July.



patients, three had a history suggestive of ulcer, and six had unrelated diseases.

The antacids tested, their composition and the number of patients in which each was used, with dosages:

Although Enterogastrone and Viodenum are not antacids, they were tested for immediate effect on gastric acidity.

Mucotin—tablets II (as mucin 0.16 gm., Al OH .25 gm., mg. trisylcate .45 aa. .5 gm.)

Amphojel—tablets II.

Okra—tablets II (aa 0.35 gm.)

Resinat—capsules IV (aa 0.25 gm.)

Resinat plus Mucin—capsules IV (aa resinat 0.25 gm., mucin 0.16 gm.)

Enterogastrone—tablets V (aa 0.5 gm.)

Viodenum—teasp. II (aa 2.0 gm.)

The comparison of effectiveness of various antacids on human gastric acidity is fraught with difficulties which place definite limitations on the value of such experiments. Many of the difficulties are inherent in the human subjects being tested, and many are introduced in the procedure used. The fasting free acid in the same patient on successive days varied as much as 72 clinical units. Another recent study has noted daily variations in the gastric acidity of the histamine-stimulated stomach. Although all antacids were chewed, the final particle size must vary from patient to patient. In the withdrawing of samples at the 15-minute intervals, the gastric contents were mixed, and thereby dispersed, increasing the effectiveness of the antacids which had a tendency to clump. A 10 c.c. sample was retained for analysis at the 15-minute intervals which grossly contained, in spite of mixing, variable quantities of the antacid being tested.

The effectiveness of various antacids in reducing the acidity in 28 human subjects is reported. *No demonstrable difference is apparent between the antacids tested.*

The report on the use of okra for this purpose aroused my special interest. What more to be expected than that the delectable, mucilaginous green vegetable would prove soothing to an ulcerated surface? The report of the work of Meyer et al. 17 years ago<sup>2</sup> certainly passed under my eye. I missed it then, but atone as best may be by looking up their report and passing on its gist, for the good of my readers and their many patients with peptic ulcer.

Their interest in the subject was aroused by the story of a colleague, who in conversation reported the apparent improvement of a patient, complaining of mucous colitis, by the use of large quantities of canned okra and okra soups. Instead of using the vegetable in its fresh or canned form,

or as an isolated vegetable mucin, it was thought that the dry, finely-ground powder would be more suitable. Through the courtesy and cooperation of the Bio-Vegetin Company we obtained a dehydrated okra powder.

The powder is light yellow-green and not unpleasant in odor and taste. With water it immediately yields a thick viscid suspension—in 5 per cent extremely viscid; below 2.5 per cent the viscosity decreases considerably—having no appreciable acid or alkaline combining powder, slightly acid to litmus. The powder, when taken with water, adheres to the gums and is not easily swallowed, so the tablet is chewed by the patient and followed by cold water. A 1-gram tablet is given q. 2 h. during daytime, at night only when pains awaken the patient.

Of 17 patients, 14 had immediate relief of symptoms on taking powdered okra. One, suspected of having a gastrojejunal ulcer, was immediately relieved for the first time in six months. This patient had had relief for a time by gastric mucin, but his symptoms returned. After two weeks of therapy with okra he was improved, but since he was fearful of the return of symptoms, and again requested surgical treatment, he was operated on.

One patient had no relief for three days after taking powdered okra; relief of symptoms came on the fourth day and he has been symptom-free on a full diet and hard work. One patient with a duodenal ulcer who had had a gastroenterostomy has not obtained relief at any time. Another, a physician, had questionable relief, but he admitted he was irregular in taking the tablets.

It is a most striking fact that of the six patients admitted to the hospital for surgical treatment only one patient was operated on. This was the patient who had severe symptoms, and had been previously relieved by gastric mucin and was unwilling to continue medical therapy. The remaining five refused operation because of the definite relief of symptoms following the taking of okra, although they had previously requested surgery.

The administration of powdered okra tablets was discontinued in 12 patients, who became symptom-free after one to five weeks of administration. On discontinuance five of these patients had immediate return of symptoms. On readministering the okra tablets, these patients were immediately relieved. In one patient we were unable to come to any conclusion as to the effect of withdrawing medication. One patient had complete relief for 35 days after one week of treatment; the symptoms then returned; they disappeared as soon as okra was taken again. Two patients, who had complete relief after four weeks of treatment, complained of slight burning and some discomfort when no okra was taken, but continued without it on a full diet

2. Jacob Meyer et al., Chicago, in *Ill. Med. J.*, Oct., 1933.

and are still being observed. Four patients, after three to five weeks of treatment, have been free of all symptoms for one to five weeks and are on a full diet.

The patients complain of occasional belching, but more often of constipation, following the use of okra tablets. This was corrected by the use of mineral oil. Two of the patients complained of increased heartburn after taking the okra for a week or more, although they were relieved of pain. On discontinuing the medication complete relief of all symptoms occurred.

#### CLOAKING OF SIGNS AND SYMPTOMS BY CORTISONE AND ACTH ADMINISTRATION

A GOOD FRIEND of the editor's Minnesota days, and a great clinician,<sup>1</sup> warns against the possibility, even the probability, of danger, even fatality, resulting from the administration of two of the recently-introduced remedies, acclaimed by reckless misusers of words as "miracle drugs."

Dr. Tuohy is old enough and wise enough to have learned and to bear well in mind the ancient, first principle of the good doctor—*non nocere*.

The wonder drugs, Cortisone and ACTH, are finding a limited place in therapy. There is accumulating evidence that the acute reaction to rheumatic fever may be limited in extent of invasion and distortion (valves of the heart of its musculature); and the obvious allergic reactions of hay fever are held in abeyance while the season passes over. No one, so far, has indicated clearly whether this withholding of the symptoms and signs of such definite entities as rheumatic fever has any limiting influence upon their natural course, or the development of natural remissions and immunity. Whatever these sequences are that restore body balances and constants in the sense of Walter B. Cannon's homeostasis, the supposition has been that this interaction of attacking agent (whatever type) and the mechanisms of bodily resistance (fever, leukocytosis, connective tissue reaction and healing) represents on the whole a salutary conflict.

Now come reports from various sources, conspicuously from McGill University, Montreal, Canada, presenting some unlooked-for side-effects in terms of the masking of common disease entities and the possible inhibition of healing due to faulty collagenous tissue activity. Two instances of diffuse peritonitis developed while the patients were under treatment with ACTH. The first was an instance of Hodgkin's lymphoma where an upper respiratory infection developed into a questionable pneumonia of the right lower and middle lobes. While the patient's symptoms and reactions were mild, nevertheless, *at post-mortem* a "heavy growth of pneumococci" was cultured from the blood of the heart

and the fluid in the peritoneum was part of a diffuse peritonitis. In another instance, a patient under treatment with ACTH for severe asthma suffered a vague abdominal attack where it was found that an ulcer of the duodenum had perforated.

Such experiences may call for extra watchfulness in the exhibition of Cortisone and ACTH. Indeed, our entire concept of nosology may need revamping. When the symptoms of pneumonia abate meanwhile systemic bacteremia develops; and when there is a response to conditions as different as is Addisonian anemia (responding in an exacerbation quite as definitely as does the rheumatoid arthritic), it would appear that these novel agents need the closest checking, not only when used therapeutically, but in investigative research.

#### TERRAMYCIN

A NEW ANTIBIOTIC, terramycin, has been added to the list of agents used in the treatment of infectious diseases, and found to be effective against a wide variety of aerobic and anaerobic Gram-negative and Gram-positive bacteria and certain of the rickettsiae. It possesses an extremely low degree of toxicity. It is apparent that terramycin is readily absorbed after oral administration of 1 gm. and that rather constant blood levels are maintained for six hours, then the adult dose is 1 to 12.5 gm. orally q. p. h.<sup>1</sup>

This high acclaim from a Mayo Clinic staff member<sup>1</sup> will be gladly accepted by our readers.

Wellman goes on to particularize and to predict even greater things.

Terramycin for intravenous use is under investigation at present. This antibiotic diffuses readily through the placenta into the fetal circulation and into the pleural fluid; however, unlike aureomycin, little or no terramycin crosses the barrier between the blood and the brain.

Large quantities of terramycin are excreted in the urine. Smaller amounts appear in the bile. When administered by the oral route, the large amounts not absorbed are excreted in the feces.

Clinical reports indicate that this antibiotic is effective in a wide variety of infectious diseases. Septic sore throat, acute follicular tonsillitis and acute laryngotracheitis have responded to its use. It is extremely effective in the treatment of the bacterial pneumonias, and the results in whooping cough are promising. Infections of the urinary tract due to susceptible organisms are rapidly brought under control; these organisms to date include *Escherichia coli* and *Aerobacter aerogenes*. With further experience more of the bacteria causing infections of the urinary tract will be added to the list. Pyelonephritis responds in a satisfactory manner to the action of this drug. Septicemia owing to *Escherichia coli* and *bacteroides* has been treated

1. E. L. Tuohy, M.D., Duluth, in *Minnesota Medicine*, July.

with excellent results. It is certain that as clinical experience with this new antibiotic widens it will be found that its therapeutic range of activity is much greater than is here indicated.

To date the only toxic reaction is occasional gastrointestinal irritation manifested by nausea and, on occasion, vomiting. Usually these symptoms can be obviated by the simultaneous administration of milk. Furthermore, it has been established that milk does not interfere with the absorption of this drug.

1. W. E. Wellman, M.D., Rochester, in *Minnesota Medicine*, July.

#### RESEARCH INTO THE ORIGINS OF DELINQUENT BEHAVIOUR

IF PEOPLE FEEL that the research worker is not merely an investigator but is also trying to help them, they will, as their confidence grows, reveal more and more of the truth, however discreditable and painful it may be, announces a British neuropsychiatrist.<sup>1</sup> And he adds: It is not possible to obtain accurate and meaningful research data unless he does so.

He offers as an illustrative case:

A six-year-old boy was brought to the clinic on account of bed-wetting, nervousness, and being generally miserable. The mother, who was intelligent and coöperative, was dealt with by a very experienced psychiatric social worker. The initial account of the family situation was that it had been a happy marriage and the baby was wanted. Not for 12 months did the mother acquire the courage to tell the true story of the boy's birth. He had been conceived before marriage, and as a result she had felt forced to marry a man whom she felt quite unsuitable.

Then comes the astonishing statement:

"Had the psychiatric social worker not been experienced, patient, and helpful, the account of this boy's early social experiences would have been pitifully inaccurate and misleading. Effective and reliable research work in this field can be done only by highly trained workers, familiar with both research and therapeutic techniques."

I would be glad to lay the eminent specialist a handsome wager, in good dollars against his devaluated pence, that any family doctor in this country—or in his own—would have got pertinent information, no later than at the third interview (indeed if he did not have it already in the natural course of events), that the omniscient specialist and his "experienced psychiatric social worker" took a whole year to bring out.

If that be a fair sample of what is going with the millions we U. S. taxpayers are giving the British I vote that the flow be cut off as of today.

1. John Bowlby, in *British Med. J.*, Mar. 11th.

A stable aqueous procaine penicillin suspension (400,000 u./ml.) proved a satisfactory product. It was injected without difficulty and gave satisfactory levels for a 24-hour period in 40 out of 40 cases. This preparation should prove particularly valuable in general practice.

#### HABITUAL ABORTION

BENSON<sup>1</sup> defines habitual abortion as the spontaneous sequential loss of three or more pre-viable products of conception, and agrees with the rest of us that it is due to a complexity of causes, and that little success has been had thus far with any or all of the available therapeutic regimens. The discussion is continued:

The incidence of spontaneous abortion is between 10 and 20 per cent of all pregnancies. The list of most likely causes would include persistent, chronic or uncorrected faults of the ova and sperm; abnormalities of the female tract; maternal chronic infections and metabolic diseases; and female dietary and endocrine deficiencies.

About the value of hormone therapy in habitual abortion there has been much loose talk. Hormones can be expected to give only limited aid. The medical management of such patients should include 1) preconceptual treatment, if possible; 2) postconceptual treatment; and 3) emergency treatment. Eagerness, gullibility, a give-it-anyhow-for-psychic-effect attitude, as well as a reluctance to abandon one therapeutic weapon when another takes its place, have led to irrational hormone therapy.

Patient and husband should both be thoroughly investigated. The BMR should always be determined, for thyroid therapy may be of great value even where only minor degrees of hypothyroidism exist. Cervicitis and other infections should be eradicated, pelvic tumors should be removed, and retroversion of the uterus may require correction—before the next pregnancy. Limitation of activity, avoidance of douches and intercourse are advised. If abortion threatens, bed rest, mild sedation, suspension of coitus, and avoidance of purges or excitement.

All essential vitamins are to be ingested in optimum amounts, preferably in the diet, which should be high in proteins. The author does not recommend as a routine therapeutic agent in the treatment of habitual abortion.

Strange it is that not a word is said about syphilis in this connection. Has the old story of Henry VIII's syphilis being responsible for the abortions among his wives and for the change in himself from the good-natured Prince Hal to the fiendish King Henry gone into the discard?

1. R. C. Benson, San Francisco, in *Calif. Med.*, June.

#### ABOLITION OF PYLORIC SPASM BY ORALLY ADMINISTERED PROCAINE SOLUTIONS

(G. Roka & L. G. Lajtha, in *British Med. J.*, May 20th)

Procaine was given orally to several hundred patients with spastic pylori, always with striking results. This simple treatment keeps the pylorus open for some hours, has no side-effects and can be repeated daily twice for several days (50-100 ml. of 1% solution twice daily). It is recommended as a simple therapeutic procedure, useful in functionally spastic pylorus and as a preparation for surgical intervention in cases of organic pyloric obstruction.



## PRESIDENT'S PAGE

### WHEN WE HAVE CROSSED THE BRIDGE, LET US LOOK BACK, LEST WE FORGET

LIFE is made up of a series of varying circumstances and multiple adjustments. Without the aid of those experienced in living, no individual would survive the mere process of living a life. This places a special burden upon those members of the human race who are now left to tell the story of their experiences. Each in his own way is qualified to help the inexperienced youth. What your responsibility may be is known best to you. That, however, does not relieve us of a certain group responsibility placed upon our shoulders.

The elders in the medical profession are more in a very special way exceedingly valuable to the young men. The embryonic doctor is about as useless in the field of medicine as a fountain pen is without ink, unless he is taught in a practical way the art and science of medicine. The science is ever changing, the art changes but little. The beginner is not possessed of the knowledge of either. The ambitious youth desiring to study medicine needs from his elders sympathy, encouragement, discipline, financial aid and opportunity. He is almost dependent upon the older doctors for all of these, because under the present system of medical education even though his tuition is paid by some agency outside the profession, this constitutes only a small part of the total necessary to equip him with the proper medical knowledge to make a successful doctor.

In discussing with a prospective doctor his life's program, we should point out that the medical profession is not a ripe financial field if money dominates his ambition in life, but if service to mankind is the dominating ambition causing him to seek the opportunity to become a doctor, great stores of satisfactions will accrue to enrich his life. This will mean long hours of physical and mental labor, will mean the suppression of his own physical feelings in many instances. Many meals will be interrupted and many nights' sleep broken into, yet they can be truthfully told that a service rendered to sick mankind has a reward far in excess of dollars and cents.

In the beginning they must go through with long hours of study, some of which to them will seem far-fetched and unreasonable, but as they progress they will find out that some of those things that seemed unimportant have changed their place and become of vital importance to their professional success. Those of us who have obtained all the college degrees that we desire should recognize the fact that the opportunity to obtain those degrees was based on a plan much more economical of time and money than is the case today. Few doctors who have been practicing thirty years realize the enormous expense of medical education today. What can we do to help the situation? We can make larger contributions to educational loan funds and every *State Medical Society* should organize one and have it in operation as soon as possible. We should contribute more liberally to the endowment of our alma mater. We should further help to keep the financial burden from being prohibitive by demanding of the educators that they carefully consider this part of the medical school's training.

Let us, therefore, look back and in appreciation for what has been done for us contribute generously to the welfare of the young doctors. We cannot do for those who have done for us because they have already been called to their great reward.

—R. B. Davis



## NEWS

DR. GLENN R. FRYE, Hickory surgeon, was chosen president of the Catawba Valley Executive Club at the meeting of the board of directors held August 1st.

DR. RICHARD B. NICHOLLS, Norfolk, Va., announces removal of offices to 750 Graydon Avenue, after August 1st, 1950, continuing the practice of Obstetrics and Gynecology.

DR. RAYMOND THOMPSON announces the association of DR. WILLIAM E. FROEMMING with the Thompson Clinic of Urology, 514 Professional Building, Charlotte, N. C.

### DIED

Dr. Robert Hervey Lafferty, prominent radiologist and pioneer worker with x-rays and radium, died July 31st in a Charlotte hospital after an illness of 10 days.

Dr. Lafferty was born in Davidson, the son of the late Dr. James Stewart Lafferty. He received his education at Davidson and the North Carolina Medical College. He did graduate work at the University of Chicago.

In 1915 Dr. Lafferty entered private practice and specialized in radiology and urology, with a special interest in the treatment of cancer.

Dr. Lafferty was superintendent of the Sunday School of Second Presbyterian Church for 30 years and also served as an elder in the church. He was a director of the Charlotte Y. M. C. A. for many years, was a member of the consultant staffs of the Presbyterian, Mercy and Memorial Hospitals in Charlotte and of Marion Sims Memorial Hospital in Lancaster, S. C. For many years he served as radiologist at Mercy and Presbyterian Hospitals.

Dr. Lafferty was a member of his County and State Medical Society, of the A. M. A., of the Southern Medical Association, the Medical Roentgen Ray Society, and the Radiological Society of North America. He was a charter member and Fellow of the American College of Radiology. He was one of the organizers of the Radiology section of the Southern Medical Association. Dr. Lafferty served as an officer in many of these organizations. He also was a member of the Pi Kappa Alpha and Omicron Delta Kappa Fraternities and was the author of a number of scientific papers and of a recently published history of the North Carolina Medical College.

For several years before entering private practice, Dr. Lafferty taught at Davidson College and at the North Carolina Medical College. After that college was moved from Davidson to Charlotte, he served as its registrar and as professor of chemistry and physiology.

Dr. Ralph H. McFadden, 63, prominent physician and surgeon, formerly of Chester, S. C., and later of Charlotte, N. C., died at his home at Whitesburg, Ky., July 31st. Dr. McFadden was graduated from Clemson College and the Medical College of South Carolina. He was associated with Dr. Pryor for many years at Pryor Hospital. Upon his return from World War I, he practiced in Chester for a number of years. He moved to Charlotte, where he practiced some years, and later moved to Whitesburg.

Dr. William Mason Strong, 74, long a leading general practitioner of Charlotte and Mecklenburg County, died August 1st in a local hospital after several years of declining health.

Born in Mecklenburg County, Dr. Strong was the son of the late Dr. John Mason Strong, who practiced for

many years in the Steele Creek community, and brother to the late Dr. Charles M. Strong.

He received his early education in the Mecklenburg schools Davidson College, and received his M.D. degree at the Medical College of North Carolina in 1904. Dr. Strong immediately returned to Charlotte where he earned the reputation of being a great humanitarian as well as an excellent physician.

Dr. Charles James Andrews, accomplished obstetrician and gynecologist of Norfolk, Va., died June 19th at his home after a long illness. He was born in Bedford County and graduated in medicine from the Medical College of Virginia in 1902. He had practiced in Norfolk for 46 years and had delivered some 8,000 babies in that time. He was a past president of the Norfolk County Medical Society, the Tri-State Medical Association of the Carolinas and Virginia, and the South Atlantic Association of Obstetricians and Gynecologists, and was affiliated with a number of other medical organizations in all of which he had been an enthusiastic member. He was for sometime chairman of the Maternal Health Committee of the Medical Society of Virginia. He had also taken an active part in civic affairs and was largely instrumental in getting milk pasteurized in the Norfolk area.

Dr. Ernest Hamlin Alderman, of Richmond, died suddenly on the street June 27th, as he was leaving the City Hall where he had been a witness in a contested will case. Dr. Alderman was born in Greensboro, N. C., in 1891 and graduated in medicine from the University of Virginia in 1921. After serving on the staff of Eastern State Hospital, Williamsburg, he joined the staff at Westbrook Sanatorium in 1928, which position he held to the time of his death. He was a member of the Richmond Academy of Medicine, the Medical Society of Virginia, the Tri-State Medical Association, and a Fellow of the American Psychiatric Association.

Dr. Thomas Banks Kell, 77, died in a Rock Hill hospital, May 31st.

The son of the late Dr. Sam A. Kell of Lancaster County, Dr. Kell received his medical education at the Medical College of the State of South Carolina (1900). After graduation, he located at Fort Lawn where he carried on a general practice for fifty years. On his birthday last March the citizens of Fort Lawn staged a celebration in observance of his half century of service to the community. It is estimated that he had delivered two thousand babies during his lifetime.

Dr. Herman H. Hines, of Pennington Gap, died July 5th in a Norton hospital. He was 42 years of age and a graduate of the Medical College of Virginia in the class of 1935. He practiced for a while in Richmond before entering the army in World War I where he served for four and a half years. He received a severe neck injury about 18 months ago in an automobile accident from which he had suffered from time to time. His wife, mother and a large family connection survive him.

Dr. Hugh S. Black, 57, died at his home in Spartanburg, S. C., on May 22nd, following an illness of several months.

A native of Spartanburg, Dr. Black received his medical degree from Jefferson Medical School (1917). After a period of postgraduate work he returned to his native city, and there, in conjunction with his father, Dr. Hugh R. Black, and brother, Dr. Sam O. Black, he founded the Mary Black Hospital, where his work was continued until his final illness.

## BOOKS

A TEXTBOOK OF GYNECOLOGY, by ARTHUR HALE CURTIS, M.D., Emeritus Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School; and JOHN WILLIAM HUFFMAN, M.D., Associate Professor of Obstetrics and Gynecology, Northwestern University Medical School; Attending Gynecologist, Passavant Memorial Hospital, Chicago. Sixth Edition. 799 pages with 466 illustrations, chiefly by TOM JONES, including 37 in color. W. B. Saunders Company, Philadelphia and London. 1950. \$10.00.

Previous editions of this work we are told were written by the senior author as a textbook for students and a guide for physicians eager to keep informed on advances in this field. With retirement of the senior author from his teaching duties he has shared the work of preparing this edition with one still participating in the teaching of gynecology.

Every chapter has been painstakingly reviewed and revised. Special attention is called to the revisions of the chapters on embryology and urinary tract problems in gynecology. As in former editions practically all the illustrations are original, and a great number of new illustrations have been made for this edition.

The book is a well balanced presentation of the subject, covering the medical and the surgical aspect of gynecologic conditions with rare impartiality.

MEDICAL DIAGNOSIS—Applied Physical Diagnosis, edited by ROSCOE L. PULLEN, M.D., F.A.C.P., Professor of Graduate Medicine, Director of the Division of Graduate Medicine, and Vice Dean of the School of Medicine, Tulane University of Louisiana; Senior Visiting Physician, Charity Hospital of Louisiana at New Orleans; Consultant in Medicine, Veterans Administration Hospital, New Orleans, La.; Consultant to the Surgeon General, Department of the Army, Washington, D. C. Second Edition. 1,119 pages with 601 figures, 48 in color. W. B. Saunders Company, Philadelphia and London. 1950. \$12.50.

It is emphasized that the scope of this book on diagnosis has been aimed toward the development of methods of the greatest usefulness to the practitioner. The editor and his score or more of helpers have used discrimination in including and excluding and the result is a product of which they may well be proud. One does not have to be chauvinistic to take special pleasure in, and give a special welcome to, good books in the making of which our own doctors have had large part. Three of the contributors are members of the Duke Medical School faculty, and six are distinguished New Orleans clinicians.

WORLD SURGERY (1950), by STEPHEN A. ZIEMAN, M.A., M.D., F.A.C.S., F.I.C.S., Abstract and News Editor, Journal of the International College of Surgeons, Abstractor for International Abstracts of Surgery and Surgery.

Gynecology and Obstetrics. With 53 illustrations. J. B. Lippincott Company, E. Washington Square, Philadelphia 5, Pa. 1950. \$6.00.

The foreword tells us that emphasis throughout has been placed on the unusual, the interesting and the unique. The volume is a condensed survey of the world literature of surgery in these aspects. The surgical journals of a great number of nations and in a great number of languages have been searched for ideas, techniques, and claims of improvement and advancement in the theory and the practice of surgery. Reading here and there in the book convinces the reviewer that the surgeon who wishes to find enough about some new, or improved, feature of diagnosis or treatment to whet his appetite for more and so seek out articles in which the new ideas and claims are set forth, will do well to purchase and make use of this volume.

HUMAN STERILIZATION: Techniques of Permanent Conception Control, by ROBERT LATOU DICKINSON, M.D., and CHARLNE JAMES GAMBLE, M.D. *The Waverly Press, Inc.*, Mt. Royal and Guilford Aves., Baltimore, Md. 1950.

The objectives stated:

To safeguard against labors carrying persisting peril to life and health; to limit progeny from feeble-minded couples; to forestall passing onward of serious hereditary disorders, and to insure against pregnancy those who have had all the children their circumstances justify.

No organ is removed and lessening of the sex desire or sex response is infrequent, while increase of both desire and response is frequent.

The technique consists of tying the ducts above the testicles, or tying the oviducts.

"Operations by the hundreds of thousands have shown no risk for men, and for women a mortality from one in 200 to one in 900 operations. Male sterilization is readily done in the surgeon's office and can be carried out thus for the female. The simplest forms of tube operation resulted in one pregnancy in one series of 358 patients followed up."

TECHNIQUES IN BRITISH SURGERY, edited by RODNEY MAINGOT, F.R.C.S. Illustrated. 734 pages with 473 figures. W. B. Saunders Company, Philadelphia and London. 1950. \$15.00.

This book, made up of a number of specially selected articles on surgical subjects and written by a score and a half of the most distinguished surgeons of Britain, is offered as a cross section of British surgery as practiced today. The editor says that the contributors were asked to draw mainly from their own experience and to present their subject in their own manner with special emphasis on technique. This reviewer is not qualified to pass on whether or not the techniques described are better than or not so good as those in use in other parts of the world. Indeed he is not at all well ac-

quainted with these other techniques. He can only point out that the collaboration of surgeons so distinguished and publishers so distinguished must result in a worthwhile book.

**THE MASK OF SANITY: An Attempt to Clarify Some Issues About the So-called Psychopathic Personality**, by HERVEY CLECKLEY, M.D., Professor of Psychiatry and Neurology, University of Georgia School of Medicine, Second Edition. *The C. V. Mosby Company*, 3207 Washington Blvd., St. Louis 3, Mo. 1950. \$6.50.

The first edition of this book concerns itself largely with the grown man hospitalized because of mental disease. Since its publication many studies have been made of women and adolescents, treated as out-patients, and this experience enters largely into the make-up of the second edition.

Section I outlines the problem in four chapters—

Sanity: A Protean Concept  
Traditions That Obscure Our Subject  
Not As Single Spies But In Battalions  
Method of Presentation

Section II—Part I consists of a dozen or more case reports. Part II deals with incomplete manifestations or suggestions of the disorder.

Section III discusses orientation, makes comparison with other disorders, draws a clinical profile.

Section IV makes an attempt at interpretation—at learning what is wrong with these patients, going into detail in logical consideration.

Section V. "What Can Be Done?" has four chapters—

Illness and Misconduct  
Legal Competency and Criminal Responsibility  
A Plea For More Than Absent-Treatment  
A Glimpse of the Promised Land

The author says he has no effective therapy to offer.

Read the book; make your own deductions, and arrive at your own conclusions.

**A TEXTBOOK OF X-RAY DIAGNOSIS** by British Authors in Four Volumes. Second Edition. Edited by S. COCHRANE SHANKS, M.D., F.R.C.P., F.F.R., Director, X-Ray Diagnostic Department, University College Hospital, London; and PETER KERLEY, M.D., F.R.C.P., F.F.R., D.M.R.E., Director, X-Ray Department, Westminster Hospital; Radiologist, Royal Chest Hospital, London. Volume IV. 592 pages, 553 illustrations. *W. B. Saunders Company*, Philadelphia and London. 1950. \$15.00.

The authors are to be commended for devoting Part I to the appearance of the normal bones and joints and Part II to the general pathology of the bone. After laying this groundwork, they go on to a consideration of congenital deformities, traumatic lesions, inflammatory diseases, static and paralytic lesions, constitutional diseases and tumors and cysts of bones and joints. Then come discussions of calcification and ossification in the soft tissues, and, finally, localization of foreign bodies. The

precise language used in all parts of the book is a delight to read. One not specially acquainted with this highly specialized subject is moved to believe that plain understandable statements made argue strongly for the reliability and the comprehensiveness of the knowledge of the subject possessed by the authors.

**PLASTIC AND RECONSTRUCTIVE SURGERY** — A Manual of Management, by FERRIS SMITH, M.D., F.A.C.S., Consultant in Plastic Surgery, Blodgett Memorial Hospital, Grand Rapids, Mich. 895 pages with 592 figures. *W. B. Saunders Company*, Philadelphia and London. 1950. \$15.00.

The purpose of the author is to supply a manual which is directive, not to teach the beginner in this special field, except through a preceptor who has had basic training, is experienced, and has competent judgment. His undertaking is to set forth the developments in plastic surgery all the way from World War I on to the present. General considerations are discussed in the initial chapter. Then come chapters on clefts and fractures of the face, surgical procedures and treatment, defects of scalp and cranium, meloplasty, plastic surgery of the orbital structures, plastic surgery of the ear and the nose, cheiloplasty, cervicoplasty, facial bone: functional and cosmetic disability, the trunk, and the extremities.

Assistance in the various special fields is duly acknowledged. A profusion of excellently executed illustrations and a good index are two features which greatly enhance the value of the book.

**CRANIOPLASTY**, by DAVID L. REEVES, A.B., M.D., Consultant in Neurological Surgery, Santa Barbara Cottage Hospital, etc., formerly Instructor of Neurological Surgery, University of Southern California School of Medicine. *Charles C. Thomas*, 301-327 E. Lawrence Ave., Springfield, Ill. 1950. \$3.00.

A large experience of dealing with cranial defects due to traumas of war and peace, and defects due to disease of bone, form the basis for this presentation. Methods of employing all kinds of grafts are described, and many case reports are included, along with sufficient illustrations to amply supplement the text.

**PRACTICAL GYNECOLOGY**, by WALTER J. REICH, M.D., F.A.C.S., F.I.C.S., Professor of Gynecology, Cook County Graduate School of Medicine, Assistant Professor of Gynecology, Chicago Medical School, etc., and MICHAEL J. NECHTOW, M.D., Assistant Clinical Professor of Gynecology, Cook County Graduate School; Associate in Gynecology and Obstetrics, Chicago Medical School, etc. With 187 illustrations, including 55 subjects in color. *J. B. Lippincott Company*, E. Washington Square, Philadelphia 5, Pa. 1950. \$10.00.

This book, it is said, has grown from experience in conducting classes in out-patient clinics and in a large teaching hospital. Emphasis is placed on the value of simple methods, suitable to office man-



agement of medical, and all but the major surgical, diseases in gynecology. Much importance is attached to a "head-to-toe survey" of each patient as she walks in, to try to discern aids to diagnosis. Then she is encouraged to tell her own story in her own words, and after this given a thorough general and gynecological examination.

Any book so conceived and the writing of which is so carried out could not possibly fail of being of unusual value.

#### APHORISMS

(A. M. Babey, Brooklyn, in *Medical Times*, July)

Be sure before you speak. To reëxamine after the diagnosis will only make the patient think that you are not sure. He will not be reassured, only unsettled. He may tempt you to reëxamine, but do not yield. A man slow to make up his mind because he leaves no stone unturned is admired by patients, but a man who speaks because he is in a hurry to show how clever he is, and then changes his mind, will get nowhere with them.—T. A. Ross, in *Edinburgh Medical JI*, May, 1939.

In 99 cases out of a hundred the diagnosis, neuritis, is wrong.—Richard Cabot.

The "blue line" of lead poisoning is not blue, but black and not a line, but dots of lead in the gums.—Richard Cabot.

Any patient with Tertian or Quartan fever with skin eruptions and joint pains should be suspected of having chronic meningococemia.—C. Keefe.

Pain in genuine sciatica never comes round to the front of the thigh and groin, such pain is usually due to some form of arthritis of the hip-joint or to anterior crural nerve disease.—W. Harris.

Loss of an Achilles jerk is a useful proof of a neuritis of the sciatic nerve.—W. Harris.

Dental neuralgia is never reflected across the middle line.—W. Harris.

Pain referred to the ear and commencing in the ear and spreading forwards along the side of the cheek and into the lower jaw and neck, even sometimes to the shoulder and down the arm to the fingers, highly suggests a lower molar tooth as the cause.—W. Harris.

Examination of the cerebrospinal fluid will disclose involvement of the central nervous system in 30% of the cases of syphilis of one year, in 20% of two years, in 16% of three years, and in 12% of five years.—Paul O'Leary.

#### TWO CANCER DOCTORS, FATHER AND SON, OF THE LAST CENTURY

In an article, "Medicine and Its Practitioners in Olmstead County Prior to 1900,"<sup>1</sup> appears an account of the activities of a "Dr." Clifton, and of a "Dr." Cole, which is a remarkable commentary on the ethical standards of 75 years ago. Housen H. Clifton, born in Kentucky in 1830, served in the Civil War. His wife served during that war as a nurse. He was a member and post surgeon of the local Post of the G. A. R.

What Clifton's medical training had been is not known. A statement, on October 22nd, 1886, in the *Record & Union*: "Dr. Clifton of Rochester has been for the past 16 years experimenting on a remedy to cure cancers. He claims to have finally succeeded in producing a remedy that takes out cancers in from seven to 14 days. All he does is to paint the affected part and the medicine does the work. It does not affect the sound flesh, but destroys the fungus growth of the cancer and it dries up and is easily removed."

1. Nora H. Guthrey, Rochester, Minn., in *Minn. Med.*, June.

Another note: "Dr. H. Clifton of Rochester has a genuine madstone. Should anyone be so unfortunate as to be bitten by a mad dog, the doctor would be glad to let him use the stone."

Dr. Clifton died suddenly in his 64th year, was buried from the Methodist Episcopal Church of Rochester under the auspices of the G. A. R.

William Clifton became an ordained minister of the Methodist Episcopal Church but never followed the calling; he studied medicine under his father and at the Metropolitan Medical College, Chicago. After his father's death, he succeeded to the practice in treatment for skin cancers, and until the early nineteen hundreds his card appeared in Rochester newspapers: "Cancers cured without cutting, Dr. Clifton's Celebrated Cure. Call on the doctor, W. W. Clifton, Rochester, Minnesota." Subsequently, it is said he became a veterinarian.

E. G. Cole, professedly a skillful oculist, came to Rochester early in 1862 for the purpose, he said, of restoring "the blind to sight," no cure, no pay, and remained probably several months. His headquarters were at J. S. Woodward's drugstore. The chief note concerning him was under Common Council Proceedings in the *Rochester Republican*: Dr. Cole's bill for services to a certain indigent patient on whose eyelid he had operated, was taken up for reconsideration and it was decided to appropriate \$15.00, to be paid when cure should have been effected. Dr. Cole's professional cards in the local newspapers were typical of the notices used by the numerous traveling medical fraternity of the time.

#### NEWER CONCEPTS AS TO CONGESTIVE HEART FAILURE

(G. W. Pedigo, Jr., Louisville, in *Jl. Kentucky Med. Assn.*, July)

Heart muscle weakness is only one factor in the causation of the clinical state of congestive failure. A metabolic disturbance involving sodium and water retention constitutes a more important one from a therapeutic point of view. The mercurial diuretics and a low-salt diet are essential in the correction of this metabolic disturbance. Such a regimen will provide relief in a large proportion of cardiac patients, including those in whom the use of digitalis is of little or no benefit. This regimen is easily applied in the hospital and the home and requires a minimum of nursing and medical supervision.

#### PAINFUL SYNDROMES INCLUDING THE NEURALGIAS

(W. M. Craig, Rochester, Minn., in *Miss. Val. Med. JI*, July)

Neuralgia is pain along the distribution of either the cranial nerves, intercostal nerves or nerves involving the brachial plexus or the lumbosacral plexus. Painful conditions which are frequently referred to as neuralgias can usually be attributed to some lesion of the brain, spinal cord or the nerve trunks themselves. The three major neuralgias — trigeminal, glossopharyngeal and occipital — are characterized by superficial pain, intermittent, sharp, shooting and knife-like, in contrast to the other types of neuralgia in which the pain is continuous, dull and deep.

The treatment for the three major neuralgias is division of the nerves—for trigeminal neuralgia of the posterior root of the gasserian ganglion; for glossopharyngeal neuralgia of the ninth cranial nerve; for occipital neuralgia of the intraspinal division of the first, second and third cervical nerves, or in some conditions injection of the occipital nerves or the division of the occipital nerves is followed by relief.

Intercostal neuralgia is usually caused by an intraspinal lesion or some lesion along the nerve roots, either post-traumatic or neoplastic, and removal of this cause is followed by relief of pain. Lumbosacral neuralgia is treated by excising any lesion which may be pressing upon the



component parts of the lumbosacral plexus. Intraspinal tumors must be removed through a laminectomy, herniated vertebral disks through a subtotal hemilaminectomy. Tumors of the pelvis and tumors of the nerves should be excised in some cases in an effort to relieve the pain.

#### REPAIR OF VENTRAL HERNIA WITH TANTALUM GAUZE IN A

DEBILITATED AND TISSUE DEFICIENT PATIENT  
(A. H. McQuillan, Waterville, in *Jl. Maine Med. Assn.*, April)

The hernia was a sequela of a laparotomy on July 2, 1949, for perforated peptic ulcer, incision drained.

Patient admitted to the hospital in January of this year, unable to work and with large ventral hernia in the right upper abdomen. Under spinal anesthesia the hernia was reopened, dissecting out the various anatomical layers. Peritoneum was closed, but it was impossible to approximate the posterior and anterior fasciae of the rectus sheath for an area 6 x 2 in. A piece of tantalum gauze 8 x 4 in. was sutured over this defect with tantalum wire, the sutures being placed at half-inch intervals around the edges of the wire into the fascia. The skin was closed over this with silk. Considerable fluid formed over the tantalum gauze which drained at the lower angle of wound for 14 days, necessitating daily dressings. Patient discharged on the 17th postoperative day.

Since that time he has been entirely free of symptoms and when seen at the end of six weeks his hernia was healed. He was wearing no support whatsoever, and having absolutely no discomfort.

#### IGNORANCE CAN BE EXPENSIVE (From A Daily Newspaper)

Mind your prepositions, boys and girls. As you well know, or ought to, they are not things to end a sentence with. No, never. They may mean money in your pocket, or out of. It all depends on how well you know how to use them.

And so we come to today's lesson in grammar, imparted by the Supreme Court of Arkansas. The learned bench holds that when a man says "between," he ought to mean, even if he doesn't, the separation of two objects. When there are *more than two*, the proper word is "among."

It meant all the difference in the world in the division of an estate under a will which said a man's property should go "equally between all our nephews and nieces on my wife's side and my niece, Nathalie . . ." Did this mean share and share alike? Not so, the court held. Nathalie gets half, obviously being in the court's eyes one half of the combination of two parts. If the will meant among, it should have said so.

It's high time for somebody to get proper about these matters. If we are going to have grammar, let's have it. And the lesson we find in the incident is that when you go to draw your will, you'd better have your lawyer show his classroom reports. An A-plus in grammar will help.

#### THE SIMULATION OF HEART DISEASE

(A. R. Gilchrist, Edinburgh Univ., in *British Med. Jl.*, Feb. 11th)

The course of events, if followed with accuracy even for a short space of time, will provide a diagnostic clue.

We must not too readily assume that ankle oedema is of cardiac origin, or that purpuric spots are embolic, any more than that a precordial pain is of coronary origin or a systolic murmur the product of endocarditis. Symptoms and signs, including radiological and cardiographic may each in turn mislead.

Perhaps the commonest error is a misinterpretation of symptoms. *Most* heart disease is imaginary, and the functional can readily be confused with the organic. Both may intermingle in varying proportions.

The personal interview conveys an understanding which no written words can describe. The doctor must free his mind of preconceived diagnostic notions and give attention to the details of the history of the illness which only the sufferer can describe. It is a good rule to base a differential diagnosis on the patient's leading symptom.

**UROLOGY AWARD**—The American Urological Association offers an annual award of \$1,000.00 (first prize of \$500.00, second prize \$300.00 and third prize \$200.00) for essays on the result of some clinical or laboratory research in Urology. Competition is limited to urologists who have been in such specific practice for not more than five years and to men in training to become urologists.

For particulars write the Secretary, Dr. Charles H. de T. Shivers, Boardwalk National Arcade Building, Atlantic City, N. J. Essays must be in his hands before February 10th, 1951.

From P. 271

Dr. Thomas H. Smith, 69, died suddenly on April 20th while taking a short vacation at Cherry Grove, S. C.

A native of North Carolina, Dr. Smith was graduated from Jefferson Medical School in 1908. Returning South, he set up an office for general practice in Dillon County where he stayed for six years. He then moved to Bennettsville, S. C., where he continued to practice medicine up until the time of his death.

One of the charter members of the group which started the annual Marlboro County January meeting, he was well known to a large number of the physicians throughout the state and his genial smile and warm handshake endeared him to all.

Dr. Edward P. McGavock, retired, Wytheville physician, died July 5th in a Roanoke hospital. He was 81 years of age and a graduate in medicine from the University of Virginia in 1893. He lived for a number of years in Richmond and was formerly professor of Dermatology and Syphilology at the Medical College of Virginia. He retired from practice a dozen years ago and returned to his native town of Wytheville. He was a member of the first Fifty Year Club of the Medical Society of Virginia. A brother is Dr. John F. McGavock of Charlottesville. Dr. McGavock was an honorary Fellow of the Tri-State Medical Association.

Dr. David M. Michaux, 78, oldest of the physicians of Dillon, S. C., died at his home on June 1st, after several years of invalidism. A native of Sumter, Dr. Michaux was graduated from the Medical College of the State of South Carolina in 1901, and entered general practice in Dillon, where he carried on his work up until his retirement four years ago. In addition to his active practice, Dr. Michaux was active in community affairs and served on the Dillon City Council six years. He was a 32nd degree Mason and a Shriner.

Dr. Michaux is survived by his widow, two daughters and three sons, one of whom, Dr. Bryan Michaux, is now practicing in Dillon.

Dr. S. I. Moon, for 37 years a practicing physician in Norfolk, Va., died at his home August 9th of a heart attack. He was associated with the late Dr. Wilbur Drake at the Tidewater Hospital for a number of years. He was graduated by Biddle University, Charlotte, N. C., and the Leonard Medical School of Shaw University. Burial was at Aiken, S. C.

## GENERAL

Nalle Clinic Building

412 North Church Street, Charlotte

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JAMES M. NORTHINGTON, M.D., Editor

VOL. CXII

SEPTEMBER, 1950

No. 9

## Problems in the Management of the Newborn Infant

EDWIN L. KENDIG, JR., M.D., Richmond, Virginia

**I**N THE TIME ALLOTTED it will obviously be impossible for me to cover all the many health problems of the newborn which may arise. I shall, therefore, touch briefly on the care of the normal baby and limit further discussion to a short resumé of three important problems incident to this time of life.

For the proper care of the normal newborn infant there are four essentials: (1) temperature regulation, (2) prevention of infection, (3) proper feeding, and (4) good nursing care.<sup>1</sup>

The nursery should be warm and humid. The optimum temperature is 75° F., the optimum humidity 55 per cent. The physical setup should be such that the nursery is easily cleaned at least once daily with soap and water. The nursery should not be overcrowded. Strict adherence to aseptic technique is necessary in order to prevent infection, and it is our opinion that, even though properly clad in gown and mask, no member of the hospital personnel should be allowed in the nursery except those nurses so assigned. At the Medical College of Virginia all babies are examined on a small shelf supported on a half-door between the nursery and an adjoining anteroom. The examining physician works from the anteroom while the nurse assists from the nursery.

It is the duty of the pediatrician or the practitioner to do a complete physical examination on each newborn infant as soon as he is called and again at time of discharge from the hospital. In the interim, he relies upon the nursery nurse to keep him informed as to any variation from normal progress, in order that he may examine the baby and prescribe the correct treatment as quickly as possible. This is accomplished in the main by daily study of the infant's chart and conference with the nurse in charge.

The newborn should be carefully fed. If the baby is breast fed, it is our practice to allow it to go to breast after it is 12 hours old. For the first 24 hours, it is allowed to nurse five minutes on alternate breasts. On the second day of life it nurses 10 minutes, and on the third day 15 minutes, on alternate breasts. On the fourth day of life it is allowed to nurse both breasts at each feeding, 15 minutes on the first and five minutes on the other.

If the baby is to be artificially fed, care should be taken that the formula be not too concentrated. It is our practice to offer glucose (5%) solution for the first 48 hours of life. At the end of that time the following formula is usually ordered:

Evaporated Milk, 4 ounces  
Dextri-Maltose No. 1, 2 level tablespoonfuls  
Boiled water, 11 ounces  
6 bottles of 2½ ounces each

<sup>1</sup> Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.

Further increases are governed by the baby's appetite and not by any time schedule. The principle used is that of allowing the infant to be hungry enough to take eagerly all of each bottle of formula for at least a 24-hour period. Our objective is to keep the baby a little hungry, rather than to hurry the feeding concentration. The next two formula increases are as follows:

#### Second formula

Evaporated Milk, 5 ounces  
Dextri-Maltose No. 1, 3 tablespoonfuls  
Boiled water, 10 ounces  
6 bottles of 2½ ounces each

#### Third formula

Evaporated Milk, 6 ounces  
Dextri-Maltose No. 1, 3 tablespoonfuls  
Boiled water, 12 ounces  
6 bottles of 3 ounces each

At time of discharge, the pediatrician or practitioner should instruct the mother as to the care of the baby. We believe that too-detailed an outline serves only to confuse. However, no matter how brief the outline, the pediatrician or practitioner should discuss it carefully with the mother. Most new mothers are careless about the study of instructions which are merely handed them in printed form. In Tables 1, 2 and 3 are the outlines which we use. Table 1 deals with vitamin administration. The mother is instructed to use both oleum percomorphum and orange juice or tri-vi-sol alone. Table 2 outlines the giving of the baby's bath. Table 3 gives the formula and a few paragraphs on general care; i.e., the giving of water, dealing with constipation and gas pains. In addition to this, the mother is instructed as to the care of the umbilicus, circumcision wound (if any), and clothing for the baby.

Table 1

#### FEEDING SUPPLEMENTS

##### Percomorph Oil

On the day following discharge from the hospital, begin oleum percomorphum (Mead's) 4 drops. Increase this amount 2 drops each day until the baby finally receives 15 drops daily. Daily dosage in this amount should be continued unless otherwise ordered. Oleum percomorphum should be administered just before the daily bath, after all the clothes have been removed.

##### Orange Juice

One week following discharge from the hospital, begin daily administration of fresh orange juice (strained), one teaspoonful to one teaspfl. boiled water, and increase the orange juice gradually until the baby receives one ounce of orange juice and one ounce of boiled water each day. This dilute orange juice may be given just before the morning bath or at 4 p. m.

Mead's tri-vi-sol, .6 c.c. (once daily after bottle has been heated).

Table 2

#### THE BATH

**Necessary materials:** 4 soft washcloths, castile soap, cotton, Q-tips (cotton-tipped applicators), boric acid crystals or powder, mineral oil or baby oil.

**Eyes:** Let alone unless there is an excess accumulation of matter. In such a case, cleanse with boric acid solution (1 teaspoonful of crystals or powder in ¾ glass of boiled water).

**Nose:** If cleansing is at all necessary, use Q-tips moistened with water. Do not insert high into nostrils. Do not use any type of oil in nostrils.

**Ears and mouth:** Cleanse only outer surface of ears. Otherwise let alone.

**Scalp:** Cleanse with soap and cotton. Use no washcloth.

**Face:** Apply clear water with a soft washcloth. Use no soap. Elsewhere use a soft washcloth with plenty of soap.

**Oil:** This should be applied to the scalp, and to all places where one skin surface rubs against another. All excess oil should be removed. Oil may be applied elsewhere as needed for dry skin.

**Powder:** Use no powder for first 3-4 months.

Table 3

Patient's Name .....	.....	.....
Birth Weight.....	Present Weight .....	Length.....
Evaporated Milk .....	.....	.....ounces
Dextri-Maltose No. 1.....	.....	.....level tablespoonful
Boiled water .....	.....	.....
Pour.....	.....ounces of this formula into each of.....	bottles.
Hours to Feed:		
6 times per day—		
6, 10 a. m.; 2, 6, 10 p. m.; and 2 a. m. if awake.		
7 times per day—		
6, 9 a. m.; 12 n.; 3, 6, 10 p. m.; and 2 a. m. if awake.		

If baby is awake offer sterile water, one to two ounces, twice daily between feedings. (To sterilize water, boil 5 to 10 minutes). Do not offer closer than one and one-half hours before next feeding.

For constipation: Glycerine suppository (infant size). If habitual, prune juice (one-half ounce) with an equal amount of boiled water. Increase or decrease as results indicate.

For gas pains: Enema, using one teaspoonful soda to one quart warm water via hand bulb syringe.

Among the more important problems which may arise during the newborn period is that of tetany.

Tetany in the newborn is not uncommon and may occur at any time during the newborn period. The clinical picture is not a specific one. The diagnosis should be suspected whenever there is abnormal hypersensitivity, twitching or a convulsion. The symptoms and signs, however, may be duplicated by intracranial hemorrhage or congenital cerebral defect. The diagnosis of tetany in the newborn infant is made when the serum calcium

is below 8 mg. per 100 c.c. Prompt and permanent relief can be effected by the administration of calcium. If the convulsions are severe or continuous, calcium gluconate (5 to 10 c.c. of a 10 per cent solution) should be given intravenously. If the symptoms are less severe, a satisfactory result may be obtained by oral administration. Fifteen grains of calcium gluconate, bromide or lactate every four hours should be given for two or three days. Intramuscular administration of calcium to newborn infants should be avoided, since abscess formation not infrequently follows.<sup>2</sup>

Impetigo neonatorum is a troublesome complication of hospital nursery care. The cause is not known, but the condition may occur in both sporadic and epidemic form. Strict isolation of the infant so affected is absolutely necessary. The lesion should be kept dry and clean and some form of local therapy is necessary. Both penicillin and sulfonamide ointments have been found to be effective, but the danger of sensitization has caused tyrothricin and furacin ointment to be more highly favored. Some prefer bacitracin ointment.

Hemolytic anemia of the newborn is one of the most widely discussed of all diseases. It has been greatly publicized and practically every mother or prospective mother is aware of some of the dangers of Rh incompatibility.

According to Levine's hypothesis, hemolytic anemia in the newborn is usually based on the immunization of the Rh-negative mother by the Rh-positive red cells of the fetus, or on occasion by a previous transfusion with Rh-positive blood cells. The mother then produces an anti-Rh agglutinin which passes into the circulation of the infant and destroys fetal erythrocytes. The Rh blood factor is inherited as a dominant trait. Two other prerequisites to the development of the anti-Rh agglutinin are: (1) fetal Rh-positive blood elements must get through the placenta and enter the maternal circulation, and (2) the mother must be capable of producing the agglutinin.<sup>3</sup>

Immunization of the mother usually occurs slowly and several pregnancies are nearly always necessary before this takes place. About 90 per cent of cases of hemolytic anemia may be thus explained. The other 10 per cent involve the Hr blood group, A and B factors, and other unusual blood group incompatibilities.

Diagnosis of hemolytic anemia in the newborn is suggested by a familial incidence, possible edema, the early appearance of jaundice, anemia, occasionally bleeding phenomena, enlarged liver and spleen, an enlarged placenta and yellow vernix.<sup>3</sup>

Since all obstetricians and practitioners do not routinely Rh-test the mother, it might be wise for all hospitals to perform a routine Coombs test on the cord blood of all babies born in that institu-

tion. While this test is not infallible, it serves as a reasonably good screening procedure for identifying those infants that should be more closely observed.

The management of hemolytic anemia in the newborn is ever changing. Multiple transfusions of Rh-negative blood is still the most widely accepted mode of therapy. Potter<sup>1</sup> has suggested that after the first week of life transfusions may be withheld until the red blood cell count is about 2,500,000, but this criterion is not a safe one during the first week. Mayes<sup>2</sup> has suggested that every baby whose mother has been demonstrated to have anti-Rh agglutinins in her blood should be given a transfusion of Rh-negative blood into the umbilical vein at birth.

In recent months we have used the following approach. If there is history of a previous fatality from erythroblastosis in a sibling, or if the infant's cord blood shows a 4-plus Coombs test and there is an anemia with less than 12 grams hemoglobin, an exchange transfusion is performed. If, however, there is no history of a previous fatality from erythroblastosis in a sibling and the infant's cord blood shows a hemoglobin of 13 or 14 grams, even though the Coombs test is markedly positive, our practice is one of watchful waiting. A daily blood count is performed on the baby and when transfusions are deemed necessary washed red blood cells are administered. The infant is observed carefully and is not considered to be out of danger until he is at least six weeks of age.

# SUMMARY

General care of the normal newborn infant is outlined. Three interesting problems in the management of the newborn; i.e., tetany in the newborn, impetigo neonatorum, and hemolytic anemia in the newborn, are briefly discussed.

—414 W. Franklin St.

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INTESTINAL BACTERIAL GROWTH can be suppressed most effectively with aureomycin. The antibiotic is effective against nearly all bacteria except *Proteus* and *Pseudomonas*. In a few cases *E. coli* and *Strept. faecalis* are not completely eradicated but are usually considerably reduced. An oral dose of 750 mg. four times daily is used by Deuring and Heilman of the Mayo Clinic in preparing patients for intestinal surgery.

—Proc. Staff Meet., Mayo Clinic, 25:87-102, 1950.

## Present Status of Pediatric Immunizations

THOMAS A. HENSON, M.D., Greensboro, North Carolina

SOME pediatricians prefer to give first the antigen of proven value such as smallpox vaccine and the diphtheria toxoid and then if the child fails to return he misses only the more doubtful immunizing agents. Others, believing that pertussis is the most prevalent and the principal cause of death from childhood diseases, immunize against it first.

### DIPHTHERIA

Immunization against diphtheria has produced the most striking and tangible results of any immunizing procedure except smallpox vaccination. The evidence of the last 20 years proves that diphtheria toxoid is far superior to the toxin-antitoxin mixture. Few reactions occur when toxoid is given in the muscle or deep beneath the skin. Immunization at six months produces a high degree of immunity over those months when the child is most susceptible and the disease most dangerous.

The choice is to immunize against diphtheria, tetanus and pertussis simultaneously using the triple antigens, through a 25- to 26-gauge,  $\frac{5}{8}$ - to  $\frac{7}{8}$ -inch needle, deep under the skin or in the deltoid muscle or the buttock, alternating the sides each month. After withdrawal of the needle the area should be massaged vigorously to discourage formation of antigenic cysts. The average dose is .5 c.c. every four to five weeks for a series of three injections for all ages of children. Booster doses of .5 c.c. are routinely given at three years and upon entering school.

The Schick test should be done six months after completion of the toxoid series and, if found to be positive after three days, a booster dose of .5 c.c. should be given. Fraser<sup>1</sup> states that there is a 60 per cent loss of antitoxin within two years after inoculation and that 10 per cent to 30 per cent will have reverted to Schick-positive within three to five years. The Schick test is to be repeated within that period, and a booster dose of toxoid given to positive reactors. Our State Board of Health advises re-immunization of all children at 12 months and five years later.

Fraser also advocates giving patients immunized in infancy one booster dose six months later, a second between the ages of 18 months and two years, and a third on entering school. Older children are to be given these doses every four to five years.

Passive immunization is used to protect exposed susceptible persons and for the prevention of spread of the disease. Dosage of 500 to 1000 units of antitoxin has been found effective in these cases. This protection is lost within ten days.

Cohen<sup>2</sup> has accomplished the transfer of immunity from mother to baby by administering diphtheria toxoid to Schick-positive mothers in the seventh and eighth months of pregnancy at intervals of two to three weeks in doses of .1 c.c., .2 c.c., .5 c.c. and 1 c.c. If the mother is Schick-negative a single stimulating dose elevates her antitoxin titer to a highly effective level to the benefit of her baby.

### PERTUSSIS

Since pertussis is, in most parts of the country, the principal cause of death from childhood diseases the general use of this vaccine is urgently demanded. Much has been written about the relative merits of the different vaccines. Many investigators have immunized hundreds of children in the neonatal period and have proved that a satisfactory immunization response can be regularly expected after the first dose of the vaccine. In 1948, it was demonstrated that every infant of a series immunized between the ages of one and three months exhibited sufficient protection against the disease.

Everyone agrees that an immunization response is more readily obtained after six months than in the first few weeks of life, but in many cases even the degree of protection afforded is life-saving even in the very young infant. Whether immunization should begin at six months, three months, one week or in the pregnant mother should depend on the local immunization schedules and not on the state- or nation-wide policy. In children whose home environment is such that they can be sheltered from the common infections, the physician may well wait with their immunization program until the sixth month when a high degree of success may be expected. When a probable exposure can be anticipated, as it can in crowded districts and where high rates of incidence of pertussis prevail, early immunization is imperative. Subsequent booster doses would then serve to prolong and reinforce the immunity obtained. Furthermore, such early immunization programs are made considerably more attractive by the fact that we have a reliable agglutininogen skin test which not only is helpful in differentiating the immune from the non-immune but also tends to produce a prompt recall of any antibacterial immunity.

Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.



In view of these principles let us again use the triple antigen preparation with doses as prescribed—usually .5 c.c. monthly for three injections. However, the alum-precipitated, phase-1, *H. pertussis* vaccine could be used alone in doses of .5 c.c., 1 c.c., 1 c.c. at monthly intervals.

Booster doses of triple antigens at three years and upon entering school could suffice for added protection. However, Sauer<sup>3</sup> uses a pertussis agglutinin skin test, which is read one-half hour or 24 hours after intradermal injection of the material. A positive (or immune) test consists of an induration or edema at least 10 mm. in diameter. Sauer in 1948 found that three months after the final dose of the triple antigen 83 per cent of his subjects had adequate protection against whooping cough. The remaining 17 per cent were given a booster injection and subsequently tested, the results being 100 per cent positive. During the four years that Sauer has used his triple antigens no child is known to have developed any of the diseases. He also states that if infants under six months of age are to be given the vaccine, four monthly injections are required. We might add that immunity to whooping cough after inoculation is variable between five months and 2½ years, but is sufficient to carry the child past the danger period.

Miller et al.<sup>4</sup> have reported that alum-precipitated *H. pertussis* vaccine, given at 1, 2 and 3 months of age, produced a higher percentage of satisfactory titers and maintained them for a longer period than did the saline-suspended *H. pertussis* vaccine. Only two febrile reactions occurred in a group of 151 infants. They also recommended routine administration of alum-precipitated *H. pertussis* vaccine in early infancy with the adoption of the following schedule:

- I. 4-6 weeks—3 injections of *H. pert. vac* (IM)  
total 40 billion org.
- II. 10 weeks—not over .5 c.c.
- III. 12-13 weeks
- IV. 6 months—Combined D. T. toxoid
- V. 9 months— " "
- VI. 12 months—Smallpox vac.
- VII. 15 months—Combined D. T. P. (10 billion *H. pert.*  
org.)

#### TETANUS

Since 1941 tetanus toxoid has been used routinely in the Army and Navy. Of the ten million soldiers taking part in World War II only 12 are known to have developed tetanus. Of these, six had received basic immunization and only four had been given an emergency booster dose. In pediatric practice tetanus immunization is the same as employed by the Army and the Navy. That is, we use the alum-precipitated toxoid and it is recommended routinely for children who spend their summers in camp, to avoid needles injections of anti-

toxin which are frequently given following inevitable injuries.

To produce active immunity we are able to rely on the triple antigen which contains the alum-precipitated tetanus toxoid. The three doses of .5 c.c. each are given IM or deeply subcutaneously at intervals of three to five weeks. A booster dose of the rapidly absorbed fluid toxoid could be given in the event of an injury. If an injury occurs before the course of immunization is completed, 1500 units of tetanus antitoxin should be given at once. Zinsser et al.<sup>5</sup> advocate giving 3000 to 5000 units of antitoxin following compound fractures or deep wounds, especially if foreign matter has been carried therein. Prior and Read<sup>6</sup> advise that if a non-immunized child is given antitoxin, he should be actively immunized with toxoid later, since the antitoxin will sensitize some to horse serum, making further administration of antitoxin difficult if not impossible.

Booster doses of tetanus toxoid can be calculated in the triple antigen at three and again at six years except in the event of injury as stated previously.

#### SMALLPOX

The material used for smallpox vaccination contains a live but attenuated virus of cowpox—one of the few instances of a live organism being used to induce immunity.

There are a number of reasons why it is wise to vaccinate against smallpox early in life. (1) There is no natural, probably not even passive, immunity to smallpox. Newborn infants have been successfully vaccinated thereby proving lack of immunity to this disease. (2) Systemic and constitutional effects are less than at later ages. (3) Encephalitis is practically unknown when vaccination is performed within the first year. (4) Immunity is conferred before a likelihood of exposure.

Vaccination should not be done in hot weather, nor until the infant shows good nutritional and physical development, nor in young premature infants, in children with eczema, impetigo or other skin disease that might cause vaccinia to appear as a general eruption. It seems well to vaccinate at the fourth to sixth month so that immunization against pertussis, diphtheria and tetanus may be performed in the six- to 12-months period, or to defer smallpox vaccination until these other procedures are carried out, since they protect against diseases which are more prevalent in most parts of this country and because immune responses to them are less effective before six months than afterwards.

There is no site of vaccination preferable to site of insertion of the deltoid muscle. If the mothers prefer, girls are vaccinated on the outer side of the middle of the thigh or of the leg. The lower

site is the better of these two because of the lesser danger of infection from diaper contents.

Of the three methods in use, the multiple pressure type is the one of choice. The needle held at a 45° angle is moved up and down rapidly through the drop of lymph at the same point six to ten times, no blood or serum being drawn. In case of failure to take the vaccination is to be repeated after one month; after a shorter interval the site of the unsuccessful vaccination may take along with the second, producing greater systemic effects, local reactions and scar-formation. It is said that the longer the incubation period the greater the susceptibility of the vaccinated person and the more severe the reaction. The small-size reaction, which occurs within 24 to 48 hours and disappears rapidly, denotes a high degree of immunity. In unvaccinated children the typical signs usually begin after five to six days and reach the height in nine to ten days when immunity is developed to the point of protection.

The three types of reaction are as follows:

1. Immune reaction—consisting of the papule with a slight surrounding erythema that lasts for two to four days.

2. Accelerated reaction, or vaccinoid—a vesicle forms and there is a marked erythema from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch in diameter. Height is reached in three to five days with systemic reactions.

3. Nonimmune reaction or typical take—the typical erythema vesicle and induration reaching its height in ten days.

Failure to react in any one of these classes is no sign of immunity, but rather evidence of an inactive vaccine or ineffective contact of the cells with the virus.

Revaccination should be performed every five years, or in the presence of an epidemic or exposure to a known case.

#### TYPHOID FEVER

The triple vaccine of typhoid, paratyphoid A and paratyphoid B organisms, heat-killed, should be used. It can be given to infants 12 to 18 months of age, the dosage one-fourth to one-half that for the adult. Authorities generally recommend subcutaneous injections at one- to two-week intervals as follows:

Under 2 years—.1 c.c., .2 c.c. and .2 c.c.

Between 2 and 4 years—.2 c.c., .4 c.c. and .4 c.c.

Between 5 and 7 years—.3 c.c., .6 c.c. and .6 c.c.

Between 8 and 12 years—.4 c.c., .8 c.c. and .8 c.c.

Over 12 years—the adult dose of .5 c.c., 1 c.c. and 1 c.c.

Booster doses are given annually of .5 c.c. subcutaneously or .1 c.c. intradermally on the flexor

surface of the forearm.

Laboratory studies have shown that the former method of three inoculations every three years yields a titer which sinks to a low level long before the expiration of the three-year period. Longfellow and Luippold<sup>7</sup> state that only 20 to 25 per cent of the individuals retain an adequate titer two or more years after the three inoculations.

From personal communication with several pediatricians in different cities of the country a consensus is derived for standardizing ages for immunization as follows:

At six months: Combined D. T. P. antigen

At seven months: Combined D. T. P. antigen

At eight months: Combined D. T. P. antigen

At nine months: Smallpox vaccination

Between 10 and 14 months: Typhoid series

At 14 months: Schick test and booster if necessary.

#### RICKETTSIAL DISEASES

Rocky Mountain spotted fever is indigenous to certain sections of this country and in Piedmont North Carolina, a moderate number of cases have occurred. The material usually used to protect against this disease is prepared from chick embryo cultures according to the method of Cox. A tick tissue vaccine is also available. When the former is used a skin test of the vaccine for egg sensitivity should be done. If positive, the tick vaccine should be used.

The vaccine is given subcutaneously in the deltoid region in dosage of .5 to 1 c.c. at weekly intervals for three weeks. The immunity lasts a year, so the vaccine should be repeated every year. The optimum time for injection is in February or March since the seasonal incidence of the disease is between April and November. The vaccine may not always protect the individual but it lessens the severity of the attack. It has no value in the treatment or in prevention following the bite.

Typhus vaccine can be given in injections of .5 c.c. intervals of two weeks for two doses. This disease is not common in this country but traveling to areas of infection is indication for such vaccination in children.

#### MEASLES

Immune serum globulin for measles modification was developed early in the war. Separation of the gamma globulin fraction carrying active specific immune bodies permits a 20-fold concentration of immune serum and thus 2 c.c. of gamma globulin is as effective as 40 c.c. of the original plasma. Janeway<sup>8</sup> states that "gamma globulin antibodies constitute the safest and most effective agent available for the prophylaxis of measles."

The globulin is given IM in either arm or in the buttocks using an 18- to 20-gauge needle. Every precaution should be taken that this preparation

not be given IV.

Most investigators are agreed that the dosage needed to prevent measles in exposed children is .1 c.c. per pound of body weight. On the other hand, gamma globulin confers a passive immunity for three to four weeks only, and since a child who has measles become permanently immune, prophylaxis has been directed toward modification rather than complete protection except in the very young. The dosage of globulin to mitigate the attack is calculated on a basis of .02 c.c. per pound of body weight, and given the fourth to seventh day after exposure.

Of the modified form of measles the incubation period is longer, the catarrhal symptoms mild, and fever and systemic indications minimal. Koplik spots are usually few; the rash is apt to be very sparsely scattered or transitory. Any individual with a few macules and moderate fever occurring 14 to 21 days after exposure should be considered to have mild measles.

Two other substances have been used in the prophylaxis of measles. One is convalescent measles serum and it is known to confer a high degree of protection, but it is difficult to obtain and large doses have to be administered. The other, placental globulin, is sold as "immune globulin, human." It has the two disadvantages that the protection is less than is afforded by the other two substances, and that the reactions such as fever, restlessness, and pain, swelling and redness at the site of injection are more severe.

Gamma globulin has played an important part in control of epidemic measles in ward patients. It was given to 350 susceptible children in 35 different outbreaks with the following results:

- 241 (94.6%) had no measles
- 13 (5%) had mild measles
- 1 (.4%) had average measles
- 95 were not followed.

#### INFLUENZA

Little has appeared in the literature about the response of infants to the injection of influenzal vaccine. In a group investigation infants under two years of age show no increase in antibody titer, while the children between the ages of 2 and 13 years made a satisfactory response when given subcutaneous injections. Other investigators have reported that one injection of .1 c.c. given intradermally produced a higher titer than when 1 c.c. was given subcutaneously.

Peterman and Kores<sup>9</sup> in 1949 published a paper on the intradermal injections of influenzal vaccine A and B. One injection was given to each of 49 infants from 4 months to 13 years of age with 99 per cent adequately protected. A further conclusion was that infants under 2 years produced a satisfactory antibody titer and it was suggested that the intradermal route be used because of less reactions.

#### MUMPS

No procedure has yet been devised for producing active immunity against mumps, and although much research has been done with convalescent serum and gamma globulin the results are not convincing. Stokes and Maris administered 8 c.c. of gamma globulin to exposed children ineffectively. Recent attempts towards the development of a suitable antigen for active immunization seem to be more promising. A mumps virus prepared from the parotid glands of monkeys has been found to protect 50 per cent of immunized children.

#### SCARLET FEVER

The advent of antibiotics has rendered active immunization against scarlet fever largely unnecessary. Sulfadiazine in small doses to exposed persons, and penicillin to those with sore throats following contact, have proved dramatically prophylactic.

However, five to seven intradermal injections of scarlet fever toxin, in from a few hundred to 100,000 skin-test doses, is advocated by some workers for prophylaxis. Ten to 15 per cent of the individuals injected had severe nausea, fever, vomiting, and a rash comparable to a mild scarlet fever.<sup>10</sup> Pains in the joints is another alarming symptom reported. In view of the reactions, the numerous injections and the often temporary immunity, and the fact that scarlet fever is not severe along the Eastern Seaboard, the procedure is not advocated.

#### OTHER

Concerning chickenpox, German measles and anterior poliomyelitis no vaccine of note has up to this date been effective. Investigations by numerous workers are being done in the fields of every disease and perhaps some day there will be a vaccine for each.

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## The Present Status of Antibiotics in Pediatric Practice

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SINCE such a major part of present-day pediatrics is concerned with treatment of a large variety of acute infectious diseases, I would like to review the recent developments in antibiotic therapy for these illnesses. In this field, more than in any other, new developments are so rapid that it is almost a superhuman task to keep abreast of them. In the short time at our disposal, I would like to speak chiefly of those diseases in which one of the newer antibiotics, such as chloramphenicol and aureomycin, has proved to be the drug of choice, and so replaces earlier therapy with antisera, sulfa, penicillin, etc. Dosages, per unit of weight, will be mentioned and side reactions when present will be given.

In speaking of the pathogenesis of infectious diseases, one would usually make the division into protozoal agents, viral agents, rickettsial agents, bacterial agents, and diseases due to unknown causes, etc., and then proceed to chemotherapeutic agents effective in each group. Such a division is unnecessary in delineating the range of effectiveness in these most recently introduced antibiotic agents. Several are active against bacteria, rickettsiae and viruses. In truth, we are approaching the *therapia magna sterilisans*, long sought by our ancient brethren, and which Ehrlich thought he had worked out. It is of interest that our earliest specific remedies, such as mercury and salvarsan, were effective chiefly against the larger infectious agents—protozoa and spirochetes. With the development of sulfonamides, bacteria became vulnerable, especially Gram-positive bacteria and the cocci. With the advent of penicillin, the field of usefulness was further extended, but not much effect was shown on those diseases caused by the Gram-negative group of bacilli. Then, to streptomycin, some of the gram-negative organisms began to yield, and the full range of this drug has not yet been explored. It is known that none of these agents has any effect on the still smaller groups of infectious agents, the rickettsiae and the viruses. Chloromycetin and aureomycin not only have successfully combatted infections caused by bacteria, but have proved to be highly specific in all members of the rickettsial group so far tested and furthermore have significant effects on a few of the virus diseases. So we see that in the last 15 years we have found effective agents for the major bacterial infections, the rickettsial diseases, and have cracked the defenses of the viral diseases.

To begin a discussion of these drugs individually, and to pay particular attention to those diseases of special concern to the pediatrician, let us begin with chloromycetin or properly, chloramphenicol. This drug is one derived from a soil *Streptomyces*. It is a bitter crystalline substance, well absorbed from the gastrointestinal tract, and serum levels are comparable to those obtained after parenteral administration.

Chloramphenicol in typhoid fever is a specific drug. Those who heard Dr. Morgan yesterday morning have already been introduced to it. After 72 hours of therapy a response in all measurable fields is noted—fever, toxicity, shock, etc. In most cases the typhoid bacillus is abolished from the stools and blood stream. Therapy should be continued for more than a week after temperature has become normal. Relapse may occur if antibody formation is not adequate. Relapses respond quickly to the drug.

Rocky Mountain spotted fever has become a commonly diagnosed disease in pediatric practice. We have had occasion to treat two colored boys with history of tick bite, and presenting complaints of fever, generalized hyper-irritability and malaise. On treatment with chloromycetin, the rash did not become apparent until the boys were clinically greatly improved and their temperature normal. Then a hemorrhagic rash was visible, whose macular precursor was not visible on the pigmented skin. Therapy should be instituted as soon as the diagnosis is made or is presumptively made, and probably should be continued for a short period of normal temperature. I have on occasions treated children moderately ill with RMSF with a single oral 2-gram dose of chloromycetin and their response was as good as that of patients on a more prolonged dosage schedule. For severely ill patients, the drug should be continued after temperature has resumed normal for a day or two. Relapses may occur up to 10 to 14 days, but they respond immediately to chloromycetin. Aureomycin is probably equally effective in Rickettsial diseases.

Typhus—scrub, epidemic and murine—responds as well as RMSF to both chloromycetin and aureomycin, and therapy with these agents replaces the undesirable traits of PABA therapy, in which the dose is very large, and the electrolyte balance can be easily disturbed.

Against virus infections, and virus-like infections, both these drugs show marked therapeutic effect. The most publicized disease which responds nicely is primary atypical pneumonia. Before use



of these new antibiotics, we had all seen patients who were febrile, listless, had a hectic cough, and positive x-ray finding for 6 to 8 weeks or more. Of the first dramatic responses to aureomycin therapy, many were dubious as to the specificity of response, but it has certainly been established in the past year that primary atypical or virus pneumonia does respond in an unbelievably short time to both aureomycin and chloramphenicol. The former drug has had wider clinical trial. Closely related to virus pneumonia are the psittacosis, ornithosis, tularemia types of pneumonitis, which comprise probably 40 per cent of atypical pneumonia. Certainly all the diagnostic possibilities should be carried out in any critical study of atypical pneumonia.

Penicillin is regarded by all authorities as the drug of choice for diseases due to Gram-positive organisms. Several factors are becoming more prominent now which show that other antibiotics may in isolated instances be of greater value than penicillin. One factor to consider is the ease with which these organisms develop resistance to penicillin and sulfonamides. In instances where such a resistance develops there has been uniformly good response with the use of other antibiotics. For example, staphylococcal infections may show no response to penicillin or sulfa, or may in the test tube prove to be unresponsive to penicillin. In a recent series studied at the Mayo Clinic, 12 out of 15 staphylococcal bacteremias responded not at all to penicillin and in vitro the organism showed no sensitivity at any attainable serum level. We recently treated a case of staphylococemia with aureomycin, and later testing of the organism showed it to be unaffected by 100 Oxford units of penicillin per c.c. The patient recovered completely on aureomycin in spite of total agranulocytosis from tridione.

We must then learn to think of aureomycin for our infants or children with severe staphylococcal infections who do not show a response in 48-72 hours to penicillin, or sulfonamide therapy.

We believe the same reasoning should extend to infections due to the pneumococcus. This organism responds well to aureomycin, and in patients showing poor response to penicillin and sulfa, or in whom the organism develops resistance to these agents, aureomycin is indicated. We all know how very treacherous pneumococcal meningitis can be in children. Since aureomycin is known to get into the cerebrospinal fluid in 30 to 50 per cent of the concentrations of the serum, and since dosage technique with it is simple, we believe strongly that it should be given as a logical adjunct to standard penicillin-sulfa treatment of pneumococcal meningitis. Further evaluation is necessary to state whether or not aureomycin is the single drug of

choice against the staphylococcal and pneumococcal infections.

Particularly to those physicians seeing many children, it is noteworthy that in a recent study of over 200 eye infections in children due to *Staph. aureus*, *D. pneumoniae*, *H. influenzae* and *Morax-axenfeld*, as well as follicular, inclusion and vernal conjunctivitis, aureomycin was effective in 98 per cent except for vernal, where it was 60 per cent effective.

Encouraging results are being seen at the present time in other diseases with the use of newer antibiotics, but extensive enough trial has not yet been made for me to report them to you as the drugs of choice, replacing previous therapy.

You have undoubtedly followed the controversial literature on streptomycin in pertussis. Out of Bolivia, where in July to October, there was a severe epidemic of pertussis, of a virulence twice that of the disease as seen here, there comes a glowing account of the use of chloramphenicol, given only to seriously ill patients, in whom the disease was confirmed by cough plate. In these cases, fever disappeared during the second day of treatment and paroxysms disappeared from the third to the sixth day. The fatality rate in untreated cases was 20 per cent. Certainly this agent deserves full investigation in this disease, which fortunately is becoming less frequent with adequate inoculation techniques.

Also in the experimental stage, but with sufficient data available to make it worthy of mention is treatment of *H. influenza meningitis*—one of the most fatal meningitides in the child, especially under six months of age. Several small series of cases are reported, some of whom received only aureomycin and some only chloramphenicol. All patients in both groups did as well or better than those treated with standard combined sulfadiazine, streptomycin, penicillin, and type-specific antisera. Chloromycetin does as well or better than aureomycin in these cases. I have seen a now healthy mouse which had received one million MLD of virulent *H. influenzae* protected completely by aureomycin. Certainly in this so serious disease any encouragement is gratifying, and we will anxiously await reports of further clinical trials. Dr. Margaret H. D. Smith, at Tulane Medical School, is doing such a study at the present time.

Tularemia is not a very common disease in pediatrics. Streptomycin has been recognized to be a specific remedy in this disease for years. The ease of administration of aureomycin and its freedom from toxic effects justify a thorough clinical comparison with streptomycin in tularemia.

Brucellosis responds to both aureomycin and chloramphenicol. The average duration of fever

after beginning of therapy is 48 hours. In no instance has there been a recurrence of fever after a permanent normal level was attained.

One of the most alarming emergencies seen in children is acute laryngo-tracheo-bronchitis attacking children between 6 months and 3 years of age. Recent encouraging results using chloramphenicol as adjuvant to early tracheotomy and bronchoscopic suction, seemed to thin and lessen the tenacious secretion, and shorten the whole period of illness. Certainly use of this drug in this highly fatal disease should be encouraged, to complement early surgical relief of obstruction.

Dosage schedules for these two drugs vary somewhat with the various investigators. Aureomycin dosage is 20 to 30 mgm./Kgm. We have found the rectal administration in capsules with holes in the ends very good in children who are vomiting, or who cannot swallow a capsule. Twice the calculated oral dose should be given. Other oral mixtures can be given.

Nausea, vomiting and loose stools have been reported following administration of aureomycin. The more recent product has less of this tendency. Amphogel tends to relieve these symptoms. There is a preparation which can be used in a drip without great danger; but phlebitis is common, up to about 40 per cent. *IM* use of this substance is possible, but so far, very painful.

Chloramphenicol dosage is from 50 to 100 mgm. per Kgm., each 24 hrs. The oral route is best. Applesauce, chocolate syrup, chocolate milk, etc., may make administration and retention easier.

At present, it seems likely that a "loading dose" of both these drugs is indicated at about 30 mgm./Kgm., then q. 3 or 4 hr. oral dosage, with lengthening of the time interval after a response is obtained, to q. 6, 8 or 12 hrs. Many have discontinued this loading dose without noticeable change in the progress of the patient, or serious complications. Loose stools, nausea and vomiting are caused in some cases by aureomycin; no such effects have been noted from chloromycetin.

In closing, it is necessary to mention the two drugs which are most commonly used in practice to combat infection, sulfonamides and penicillin. I would like to point out that if either of these drugs is indicated clinically, a sufficient dose over a sufficient length of time should be given. Five days of therapy with sulfonamide, or at least three days with penicillin, should be given to minimize development of bacterial resistance, and at the same time to achieve a therapeutic response.

#### EIGHTY PER CENT REDUCTION IN WHOOPING COUGH MORTALITY

(*Bul. Met. Life Ins. Company, July*)

Last year, for the first time, there were fewer than 1,000 deaths from whooping cough in this country—maybe less

than 800. These figures take on added significance in the light of the high recent birth rate, which has greatly augmented the numbers of young children in the population.

Streptomycin and aureomycin have been used with success and new antibiotics are being tried.

The major task is to develop measures that will prevent or cure the disease in very young infants. To whooping cough, unlike other childhood diseases, there is little or no natural immunity during early infancy. The peak of mortality comes in the second, third, and fourth months of life, before the age at which immunization ordinarily is begun.

To cut this death toll, chief reliance must be placed on early prophylaxis—before the age of three months. Experience shows that effective immunization can be started much earlier than is now generally practiced, and that it is well tolerated by very young infants. Unavoidable delay in treatment because of difficulty in diagnosing whooping cough in early infancy is another good reason for early immunization. When the incidence of the disease begins to show a cyclical rise, babies in the areas affected might be given this protection as early as the first month of life.

In case the disease develops it must be recognized early and treated with oxygen, aspiration of respiratory tract, measures against dehydration, careful feeding and hyper-immune serum.

#### PROLONGED RETENTION OF DEAD FOETUS IN UTERO (A. H. Howie, in *British Medical Journal*, July 15th)

A Chinese 3-para, aged 47, was admitted to hospital on Jan. 4th, 1950, complaining of abdominal lump which had been present for over two years, and weakness and inability to leave her bed for two months. Her youngest child was aged 20. In August, 1946, she became pregnant and, apart from the fact that the size of the abdomen led to a suspicion of multiple pregnancy, the antenatal period was uneventful. At term there was a little vaginal bleeding and she had pains resembling those of labour. Foetal movement ceased, the membranes did not rupture, and nothing was expelled. Menstruation returned and was normal and regular until four months before her admission to hospital. The abdomen was smaller when the periods were regular, enlarging when they ceased.

T. was 97°, p. 78, r. 20, b. p. 82/58; r.b.c. 2,710,000, haemo. 52%; Kahn was plus.

The patient was kept under observation for nine days, during which efforts were made to secure donors for blood transfusion. These were not forthcoming. Many of the Chinese look upon their blood as their life, and do not feel called upon to give it even for a relative. The husband and daughter were willing, but were unsuitable.

Jan. 15th, abdominal incision was made; the uterus contained a full-term foetus decomposed.

#### SALICYLATES AND RHEUMATISM (Editorial in *British Med. J.*, June 10th)

Reduction in the incidence or severity of myocardial and valvular lesions in the course of rheumatic fever consistently followed when salicylates in plasma concentrations of 15 to 30 mg. per 100 ml., were maintained, and administration started early. Also reduced were skin reactions evoked by animal and bacterial antigens.

The dosage required to attain these levels was from 0.12 to 0.21 g. per kg. body weight—and unpleasant and dangerous toxic effects may supervene if they are exceeded.

If serum disease of rabbits is related to rheumatic fever the case of those who advocate high plasma salicylate levels at an early stage is reinforced, but it must be emphasized that this carries with it the risk of serious toxic effects and entails close supervision.

## PRESIDENT'S PAGE

## Message for Old Members

**Y**OU AND I have been privileged to be members of one of the most noble professions known to mankind. In addition to this privilege there have been added many others during our professional lives, such as being a respected citizen from the day we hung up our shingle until the present day, that of being a member of the best society in the community and classified by all mankind as their benefactors where help mentally, morally or financially is needed by them.

One of the great blessings accorded us has been that of being a member of the Tri-State Medical Association with all its rights and privileges. In this great organization great minds and great hearts have communed together for the benefit of both themselves and those whom they serve. There, too, has been in addition a wonderful companionship spirit existing at all times regardless of the time or place that its members met. To my knowledge, there never has been a time when there was internal turmoil in this Association. Such tranquillity cannot be truly said of all organizations. The warm-hearted greeting, coupled with the friendly handshakes of the members during their annual meetings is something that we should be proud of. All of these rights and privileges do not just happen. Great personalities spent time and effort in developing this organization. You and I will appreciate it accordingly as to how much we have contributed to the progress of our Association. To those of us who have served with our time and our efforts, there comes a sense of proud gratification when we mention the word "Tri-State."

Each of us can look back over the period of years with sincere appreciation for the friendship and companionship that the Association has brought to us. We further have a profound sense of gratitude for those great men who have preceded us in years gone by. They were farsighted. They were highly trained in both the art and science of medicine and were very tolerant toward us as we were cutting our teeth in the profession.

Your President has been blessed with membership in this great organization for twenty-three years, during which time he has never heard an older member either on the floor or in private conversation belittle the efforts of the young members. Truly this is a democratic organization. It is an educational association whose primary function is that of stimulating interest in both the art and science of medicine, encouraging all members to speak and write freely of the knowledge they have gained, whether their professional career be over a long period of time or a short period of time. As we older members realize that our associates and companions of our age are rapidly passing on to the great beyond, it behooves us to work hard to encourage and stimulate interest among younger members of the profession. Let it be our prayer that we shall at all times endeavor to emulate the great lives that have passed on, never forgetting that encouragement to the young doctor will reap a great reward and will truly give us the name of a great physician.

—R. B. DAVIS.

# DEPARTMENTS

## HUMAN BEHAVIOUR

REX BLANKINSHIP, M.D., *Editor*, Richmond, Va.

### NARCOANALYSIS FOR CRIMINAL INTERROGATION

ALL OF US have read many times in the newspapers about some accused person being given a "truth serum" to force confession from him. Knowing that the law forbids the forcing of one to testify against himself, and the utter idiocy of calling any of the drugs used a "serum," prejudiced most of us against the procedure. However, many will be interested to have from a reliable source<sup>1</sup> a description of the technique, and an honest, intelligent evaluation of the procedure.

Narcoanalysis—the use of drugs, the [foolishly] so-called "truth serums," to detect evasion, deception and lying—is not of long practice. It was first tried by psychiatrists in the early 1930s to uncover the half-forgotten or suppressed past of inhibition-bound patients. A considerable number of drugs—ether, nitrous oxide, scopolamine, barbiturates—have been tried, but no agreement has been reached as to the best agent.

What the subject says during narcoanalysis is not to be used as evidence, but to confront the patient later and as a source of clues through which to pursue investigation.

Narcosis is sometimes welcomed by persons who have a desire to confess but cannot bring themselves to tell the truth. Even the criminal, particularly a notorious criminal, may wish to boast of his cleverness.

The fear of punishment is the strongest deterrent to a criminal confession, but this may be less than a subconscious desire for punishment. Narcosis probably overcomes natural caution and reduced the fears which have kept these self-harming desires from fulfillment. Reasoning is restricted, if not banished, by the drugs, and the conversation of a patient in narcosis becomes a series of automatic responses to stimuli. The tongue is unable to reject any impulse sent by the memory.

The concept of privileged communication forbids the physician to discuss with a third person knowledge obtained by examination of a patient, yet, under the law, the physician may be prosecuted if he withholds any information, no matter how derived, which may lead to the capture or conviction of a criminal. The law requires, for instance, that a doctor report to the police any firearm wounds brought to him for treatment. Apparently,

J. J. H. Matthews, M.D., Univ. of Minnesota. Minneapolis, in *Bul. Univ. of Minn. Hosp.*, 21:422-432, 1950.

then, the doctor cannot conceal criminal information obtained through narcoanalysis.

The Bill of Rights specifies that no person shall be forced to testify against himself in a criminal case. Since the prisoner may give damaging evidence against himself during narcoanalysis, he must be put on notice that any information which he gives may be used against him in court. The reputable physician will, therefore, refuse to perform narcoanalysis until the suspect, understanding this, consents voluntarily to the procedure.

The technic used in 10 cases of narcoanalysis for criminal investigation: The action of the drug and the purpose of the test were explained to the subject. At this time the doctor attempted to establish friendly relations with the suspect while making certain that he understood the possible implications of the procedure. Only three patients remained suspicious throughout the interviews; none offered any real objections.

Every subject was thoroughly examined physically for any possible contraindication for administration of the drug.

Seconal was given orally, 1.5 gr. an hour or two before induction, to six patients, and 0.75 gr. *IV* a few minutes before in one case. Less narcotic drug was given patients who received secenal premedication than for the other three.

Various combination of three agents, all given *IV*, were used: morphine and scopolamine in one case; pentothal in another; morphine, scopolamine and pentothal in three cases; and pentothal and scopolamine in the remainder. The combination of pentothal and scopolamine, with or without morphine, gave the most favorable level of anesthesia and required smallest amounts of the drugs.

Morphine (1/12 to 1/4 gr.) when morphine was used, and scopolamine (1/300 to 1/100 gr.) were administered first, *IV*, a constant ration maintained between the two drugs of 25:1. When the effect of this medication had been evaluated, sodium pentothal, 2.5%, in distilled water was begun, 1 or 2 c.c. a minute. During this period conversation with the patient was on irrelevant subjects.

Interrogation was begun when the patient reached a state of confusion and somnolence, usually in 10 or 15 min. of the injection of 15 to 25 c.c. of pentothal solution. Most subjects were able to answer questions immediately with sufficient stimulation.

The most incriminating statements were obtained from persons just above the level of unconsciousness; speech was thick, sometimes unconnected, and questions and stimuli often had to be repeated. To maintain this level, pentothal was administered at intervals of 5 to 30 min. The maintenance dosage was 1 to 4 c.c.

If the interrogation lasted longer than two or three hours an additional *IV* or *IM* injection of



morphine and scopolamine was given; another such injection was necessary after the fifth or sixth hour.

In this series of 10 interrogations, of from 2½ to 11 hours, the total dosages of *pentothal* were from 48 to 80 c.c.; of morphine, 0.5 to 0.75 gr.; of scopolamine, 1/100 to 1/75 gr.

The suspects lost the ability to select responses, were not always able to distinguish between truth and illusion, and frequently distorted chronologic sequence. Some also apparently were capable of lying, even of reasoning in a distorted manner, in spite of narcosis. This defensiveness was much stronger when the suspect had been previously peatedly questioned than when narcoanalysis was done early in the investigation.

Skillful interrogation, based on sound knowledge of the particular subject and the crime being investigated, is essential in narcoanalysis. Often the form rather than the substance of a question will arouse a defense mechanism in the subconscious of a patient under narcosis, and a simple change in wording may elicit a truthful answer.

As narcosis wears off, the patient may become apathetic, hostile, even violent. Some will deny and some confirm the information obtained during the interrogation. The results of these tests were completely in accord with those reported from earlier such tests.

The three subjects who admitted guilt during narcoanalysis subsequently confirmed their confessions, while the rest of the suspects were completely cleared by information, previously withheld, which they gave during the test.

## HISTORIC MEDICINE

### NOTES AND COMMENTS ON THE BLACK DEATH\*

AS EARLY AS 532 A. D., during the period of Justinian I, plague was known to exist in Constantinople. It is generally believed that the disease visited the Mediterranean World from the Orient by way of the lively trade routes between the West and East. The former splendor of the old Greek and Roman civilizations was fading under the military might of the barbarians. In Italy plague spread, killing millions of people; smallpox broke out simultaneously. The Empire of the Ostrogoths was destroyed by the epidemic rather than by any other cause. In the East, while Justinian was attempting to consolidate his empire after the Roman style, it suffered the same fate and soon the Eastern Roman Empire collapsed, hence this epidemic was also known as the Justinian plague.

In spite of the active trade between the West

\*Yang Chi-Shih, in *Chinese Med J.L.*, Shanghai, Jan.-Feb., 1946.

and East and the turmoil of repeated Crusades, plague remained localized in the Mediterranean World for nine centuries. In 1315 to 1317 Europe suffered from the worst famine in history. Wars were being waged all over the Continent. England defeated France at Crecy and Calais; the Scottish allies of France invaded Northern England; the Hungarians attacked the Kingdom of Naples and were forced to retreat on account of the plague. Wars in Spain, Germany, Poland and Russia were in one way or another interrupted or stopped by the epidemic.

Controversies still exist as to the source of the contagion of the "Black Death" of 1348-1349. It is likely that since its first introduction into Italy, plague became endemic but for some unknown reason it broke out eight centuries later. This time it started to spread toward the Black Sea, Asia Minor and Greece, Egypt and Northern Africa. From southern Europe it spread swiftly northward, along the western coast and in a brief period the entire continent of Europe was involved. In 1348-1349, 25 to 40 millions (one-fourth of the population) died of the disease.

Guy de Chauliac, the great French surgeon (1300-1370), wrote: "The great mortality appeared at Avignon in January, 1348. The plague was of two kinds. The first was characterized by continued fever and spitting of blood, and people died of it in three days. The second was all in the external parts, chiefly the armpits and groin, and people died in five days. The father visited not his son, nor the son his father. Charity was dead and hope crushed. It left scarcely a fourth part of the people. In some places they thought that the Jews had poisoned the world; and so they killed them. In others, that it was the poor deformed; and they drove them out. In others, that it was the nobles; and the latter feared to go abroad. Finally they reached the point where they kept guards in the cities and villages, and permitted the entry of no one who was not well-known. And if powders or unguents were found on anyone, the owners, for fear that they were poisons, were forced to swallow them.

When a city was stricken by the plague its people fled in panic and confusion, leaving behind them their houses, properties and even members of their families—the old and weak were left to die. Petrarch, the great historian, who was at Avignon with de Chauliac, lamented; "Has one ever seen anything like this, ever heard of reports of a similar occurrence? In what annals has one ever heard that the houses were empty, the cities deserted, the farms untended, the fields full of corpses; and that everywhere a horrible loneliness prevailed."

In religion, St. Sebastian of the 7th century be-

came the patron saint of plague. However, this old-time plague specialist failed to protect the people of the 14th century, and thereupon a new saint had to be installed in the form of St. Roch. The latter was a citizen of Montpellier who devoted himself to the nursing of plague victims. This was the new saint of plague. Francesco Carrotto (1528) painted him with a bubo of plague in his right groin. Since then both saints have been invoked together in time of pestilence.

The Black Death found the lepers easy victims with the result that most of the leprosia in Europe were emptied of their inmates, and since then the disease ceased or practically disappeared from the Continent.

On July 27th, 1377, Ragusa promulgated the law that all travelers from areas of plague be refused admission into the city, unless they had stayed one month on the Island of Mercana. Venice followed the good example. The oversea travelers were first segregated on the island of San Lazzara for a period of 30 days, later extended to 40 days, hence the name quarantine.

The death of a quarter of the population of Europe resulted in a very serious shortage in manpower; the cost of living soared and thereby general social unrest prevailed. Labor movement as we understand it today originated from this time. Thus we see that the Old World with its social, economic and political order had died with the plague. The Black Death can therefore be truly called an important milestone in the history of Europe, to be followed soon by the most brilliant and glorious era of the Renaissance.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### TRANSURETHRAL RESECTION OF THE PROSTATE GLAND

THIS OPERATION has brought about a tremendous lessening of the immediate post-operative mortality and of patient discomfort, earlier ambulation, and shorter hospital stay, this last resulting in less expense to the patient. One now can offer relief to the very aged, the debilitated and the poor risk patients who in years past have been forced to lead a "catheter existence."

One hundred consecutive cases of prostatic obstruction have been operated on by the transurethral method.<sup>1</sup> The Thompson resectoscope was used exclusively. Ninety-one of the 100 were cases of benign prostatic hyperplasia and nine were adenocarcinoma. The maximum age of the patients was 89, the average 65.5.

Confinement in bed lowers the blood pressure of

the elderly patient with resultant predisposition to vascular accidents. Catheter drainage is not used unless acute retention has supervened and surgical intervention must be delayed 36 to 48 hours in order to complete the general examination, or the blood urea is elevated. In the latter case one need wait only until the patient can take 2500 to 3000 c.c. by mouth. (Parenteral fluids need not be administered if 2500 to 3000 c.c. can be taken by mouth.) In the event intravenous fluids are used 5 per cent glucose in water is sufficient. It is easy to overload the system with NaCl which might result in retention of water in the tissues. In all cases of retained urea, one must pay particular attention also to the acid:base equilibrium, as evidenced by the CO<sub>2</sub> combining power. By the judicious use of Hartman's solution, or NaH CO<sub>3</sub>, one can supply sufficient base to combine with the excess urea, even if the patient is quite acidotic.

A cystoscopic examination should be made immediately prior to resection in all cases in which the diagnosis can be established positively by the history and physical examination. Only those patients concerning whom there is some doubt as to the need for resection should be subjected to the two procedures at separate times. Perhaps one exception to this rule is the case of the extremely bad risk in which time is all important. In this group the five minutes under anesthesia needed for cystoscopy can better be used to resect. Also, it gives some idea as to how the resection will be tolerated, and guides the surgeon in his plan for treatment and surgery.

The vas deferens should be ligated bilaterally in all cases.

A careful work-up should be carried out by the internist prior to surgery, especially of the patient who is an extremely bad risk. However, the elderly tolerate surgery better within the first 48 hours after admission than at a later date, so we prefer to operate within that time unless some compelling reason is found for delay.

With few exceptions we have used pentothal anesthesia, supplemented with nitrous oxide and oxygen. Proper use of the latter agents enables one to use less pentothal. Most patients awaken on the table.

The technique of resection is now well standardized. All agree that cutting a gutter or channel through the prostatic urethra is inadequate and the results disappointing. The success of transurethral resection is directly proportional to the completeness of removal of the gland.

Because the risk of operation among elderly patients varies in direct proportion to the time consumed, time of operation must be short. Some patients will tolerate two 15-minute procedures two to three days apart, who will not survive one 30-

1. J. B. Benne & C. A. Wattenberg, St. Louis, in *Ill. Med. J.*, Aug.

minute procedure. If more than normal bleeding occurs the blood pressure must be maintained with glucose, plasma or blood.

Postoperative strictures should be prevented, first of all by the use of instruments of proper size. Meatotomy must be carried out if the meatus will not admit easily the 30 F sound. The entire urethra should dilate easily to 30 F. Proper lubrication of instruments and care in passing these through the urethra will help prevent strictures.

A strict aseptic technique is necessary. We are entirely satisfied with water as an irrigating solution during operation, as long as the water pressure is not too high, and with N-saline as a post-operative irrigating solution.

A 3-way Foley catheter<sup>7</sup> and continuous closed irrigation for the first 24 hours will keep the patient comfortable, lessen the nursing problem and minimize the chances of gross contamination of the operative site. A 24 F. catheter is used and not changed until ready to have the patient void. Practically all patients are in a chair the day after operation. Always allow the catheter to drain and never cork it up. Early ambulation of patients can hardly be over-emphasized.

The catheter generally is removed in 48 to 72 hours and in most cases the patient voids with a freedom he has not known for a long time. If there is any difficulty the catheter is reinserted for 48 hours; if there is still difficulty, make a cystoscopic examination and be prepared to remove more tissue since that will be the cause of the trouble in most cases. Within 48 hours after the catheter has been removed the patient can be discharged to his home. It is best that the patient remain within easy access for the first 12 or 14 postoperative days. Some patients who live a long way from the city prefer to remain in the hospital for the entire period.

After two weeks' postoperative care, bleeding can well-nigh be forgotten because no secondary slough and bleeding follows use of the Thompson resectoscope. Most patients continue to improve and obtain maximum benefit in six to eight weeks, at which time the urine should be free of infection. If this is not true, a short course of chemotherapy will clear up the infection promptly. We do not check for residual urine post-operatively until the fourth week.

In a large series of transurethral prostatectomies published by G. J. Thompson, it was found that of patients with adenomatous enlargement only five per cent had a recurrence of symptoms in 10 years. This seems negligible when one remembers the average life expectancy of patients of this age group.

In this group of 100 cases, there was one death. This emphasizes that with careful management

transurethral prostatectomy can be performed with much less risk than any other type of prostatic surgery. The patient who died had severe syphilitic heart disease and bladder symptoms caused by CNS syphilis. He was greatly debilitated and we feel sure the 45 minutes of surgery was too much for him. If the procedure had been divided, he might have survived.

## PEDIATRICS

ALBERT M. EDMONDS, M.D., *Editor*, Richmond, Va.

### EVALUATION OF THE MUMPS SKIN TEST\*

ENDERS ET AL. in 1945 reported that individuals who had had epidemic parotitis gave a tuberculin-like reaction following the intradermal inoculation of a small amount of an emulsion of the parotid gland from monkeys infected with mumps virus. Shortly thereafter the virus was adapted to the chick embryo by Habel. He also demonstrated a good correlation between the skin reactions to virus grown in the chick allantoic sac and in the monkey parotid gland. Because of the greater availability of egg-grown virus, the wider use of this reaction then became possible.

Enders and co-workers showed that in general the mumps virus skin reaction became positive several weeks following infection and that it might remain so for many years. They also showed that the majority of patients with positive skin tests had complement-fixing antibodies. Nevertheless, the two tests are not entirely parallel. Because of its greater persistence, the skin test would seem to be a more sensitive indicator of previous infection than the complement-fixation test. The chief exceptions to this generalization are young children in whom the skin reaction is often less striking. It seems that persons exhibiting erythematous dermal reactions of 10 mm. diameter 48 hours after inoculation may be regarded as resistant to epidemic parotitis.

During the period covered by this report 40 households were studied. These were the source of 42 first cases of epidemic parotitis; contacts included parents, siblings and domestics. It was possible to skin-test 26 of the first cases and 109 of the contacts at least once. Eighty of these contacts were adults and 29 were children. Twenty-eight of these were retested several months later.

The skin reactions appeared after 18 to 24 hours and were usually not as clear-cut as a tuberculin reaction. Some tests positive after 24 hours had faded by 48 hours. Most positive reactions took several days to fade completely.

All 26 of the first cases gave a negative reaction when tested during their acute illness. When 15

\*Abstracted from article by A. L. Florman, M.D., et al., in *Pediatrics*, March, 1950.



of them were retested several months later, 14 had become clearly positive and one questionably so.

Among the 109 contacts there were 60 with positive skin tests and 49 with negative tests. Eleven of the 12 secondary cases of epidemic parotitis that occurred were among the 49 nonreactors.

Among the 109 contacts were 35 who recalled having had epidemic parotitis. The majority of these, 29, gave positive reactions to the test material. Of the 49 contacts who thought they had not had epidemic parotitis, 31 gave negative skin tests. Nineteen who thought that they had not had the disease had positive reactions, and 13 of the 23 who were uncertain whether they had had it also gave positive skin tests.

In general children react less well to the antigen than do adults.

It is concluded that the test is of value in determining susceptibility to epidemic parotitis. In view of the large number of clinically inapparent cases, the skin test should prove useful in relieving unnecessary concern for infection by parents who do not recall having had the disease.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### CARE OF MATERNAL SOFT TISSUES IN LABOR

INJURY TO MATERNAL SOFT TISSUES during labor, says Cooke,<sup>1</sup> is usually the result of needless interference with natural performance, and to prevent such damage requires knowledge of normal processes and restraint from interference.

It is refreshing to read such a blunt, sensible statement of this important fact.

This good doctor elaborates:

In the second stage of labor, uterine contractions provoked by pitocin may do great destruction of the supporting structures and the perineal tissues. Before the widespread adoption of analgesia, episiotomy, excessive expulsive efforts by the mother during the first stage was a common cause. Such misguided premature bearing down exhausts the mother and may kill the fetus.

Manual dilation of the cervix is an evil unnecessary practice. When the buttocks begin to distend the introitus the cervix is still incompletely dilated. If an attempt is made to drag out the baby, the cervix may be badly torn or the fetal head and arms become imprisoned by the tight orifice, with consequent cerebral hemorrhage, cervical or brachial plexus injury, or fractured neck or arms.

The only correct technic for forceps extraction is the limitation of normal labor, by rotation of the

head to the most favorable diameter and moderate 30-second pulls in the axis of the birth canal, repeated at intervals of not less than two minutes. With occiput-posterior and transverse positions, three points must be borne in mind:

1) The head enters the pelvis in a transverse or posterior position in at least 40 per cent of cases.

2) The great majority of such malpositions are corrected spontaneously in the midpelvis, especially after complete dilation of the cervix.

3) The position of the head is unimportant if descent is continuous.

Two simple rules facilitate the management of occiput-posterior and transverse positions:

1) Wait until the head has failed to progress for two hours after complete dilation of the cervix.

2) Learn the correct technic of manual rotation or of the use of forceps.

Premature intervention in cases of actual cephalopelvic disproportion, especially by forceps above the midpelvic plane, causes excessive damage to the visceral supports. *Watchful waiting will often resolve mechanically obstructed labor.* Reasons for cesarean section should be strongly valid to warrant the risk in a future labor of a uterine scar.

The original Credé maneuver, the separation and expulsion of the placenta by manipulation and compression of the uterus, is a serious error; after separation, the Credé method may properly be employed, but a simpler, more effective technic involves holding the empty and contracted active segment of the uterine firmly with one hand and using the other hand to compress the structures containing the placenta from side to side and from front to back with a milking movement from above downward. The lower part of the placenta, which bulges from the introitus may be grasped and lifted out of the vagina.

Despite the chance of introducing infection into the uterine cavity, manual removal of the placenta is indicated after two hours in cases with little or no bleeding. Profuse continuing hemorrhage demands immediate interference; ideally, manual removal should wait until hysterectomy preparation is complete.

### THE TREATMENT OF CARDIAC EDEMA WITH THIOMERIN SODIUM (MERCAPTOMERIN SODIUM)

(Arnold Iglaue, Cincinnati, in *Cincinnati J. of Md.*, May)

Thiomerin was given subcutaneously and intramuscularly 499 times to 42 ambulatory patients with edema due to chronic congestive heart failure. Thirty-eight patients (90%) had a satisfactory diuretic response.

No evidence of renal impairment appeared in patients with normal kidney function at onset of therapy; signs of renal damage did not increase during treatment of patients with abnormal kidney function at onset of therapy.

The incidence of local and systemic reactions was higher than in other reported series.

Availability of a new diuretic permitted treatment of three patients who did not tolerate other diuretics well.

1. W. K. Cooke, M.D., Univ. of Texas, Galveston, in *J. Omaha Mid-West Clin. Soc.*, 2:45-49, 1950.



## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### REHABILITATION OF PATIENT WITH HEMIPLEGIA

LITTLE of a helpful nature in the management of cases of hemiplegia was taught any of us in college or hospital. An outline so promising of results as that given by Yamshon<sup>1</sup> will find general welcome, to the profit of many a patient.

Motivation is the keystone of rehabilitation. Internal motivation is frequently lost in chronic debilitating illnesses; in order to renew it, external motivation must be supplied as a stimulus. This is accomplished by demonstrating to the patient that he is capable of performing a movement which he did not consider possible.

Atonicity or flaccidity may be a barrier. In many cases, however, the patient may be made ambulatory with the aid of a long leg brace.

In cases in which paralysis has been caused by cerebral hemorrhage, activity must wait until all evidence of bleeding ceases. Patients who have had cerebral embolism or thrombosis can be started on treatment within 48 to 96 hours. Initially, atonicity is usually present. This pseudoflaccid stage later changes to a spastic stage. The muscles on the involved side begin to atrophy immediately as the result of disuse. The involved muscles will respond, by contraction, to electrical stimulation. Electrical stimulation can delay atrophy even in muscles in which peripheral nerves have been severed. To minimize atrophy of disuse, the paretic muscles are electrically stimulated. In the later stages when hypertonicity appears, and with it some degree of voluntary motion, electrical stimulation is no longer indicated.

During the atonic phase, it is important to maintain the range of motion in the joints. Contractures are liable to develop, particularly in older individuals. The commonest site of contracture is the shoulder. Contracture of the ankle in plantar flexion, while common, is more apparent than real. At this stage, motility is maintained by passively moving each joint through its complete range of motion at least once a day.

Teaching the patient the activities of daily living is started at the onset of treatment.

With the return of tone in the involved muscles the amount of voluntary motion possible depends on the site and size of the cerebral lesion. The long-lasting movements which are dependent upon sensory guidance suffer most. The arm suffers more than the leg and the hand more than the arm.

When the patient tries to walk there is a foot

drop, which prevents the leg being carried through during the step. A short leg brace with a 90° ankle stop is an aid. Patients with mild ankle clonus need only a light spring brace. If the clonus is more severe, a double-bar trace is necessary.

Pressure over the knee of the seated patient as he attempts to flex his hip stimulates the stretch reflex. For patients incapable of voluntary hip flexion, the application of painful stimulus such as may be caused by bending down the toe is of aid. Parallel bars may be used in teaching ambulation. The patient learns to stand and then to walk. Paresis of the arm is more difficult to overcome; good functional recovery as a result of overcoming atrophy of disuse is not uncommon. The strength of forward flexion and elbow extension can be increased by 300 per cent when the tonic neck reflex is used to reinforce voluntary motion. In addition, strength in the arm can be further increased by as much as 200 per cent by overcoming atrophy of disuse in the course of treatment.

The so-called frozen shoulder may be treated by manual manipulations and by passive stretching. If the tonic neck reflex is utilized during the treatment of the frozen shoulder, an increase of 10° to 20° of forward flexion, abduction and external rotation may be obtained on passive movement. If the tonic neck reflex is neglected during stretching, the spasticity tending to produce adduction and internal rotation remains to be overcome. The range of motion attained may be maintained by pulley exercises. Here again the tonic neck reflex is of aid.

Occupational therapy procedures, which have the advantage of keeping the patient interested in improvement, are best suited to treatment of the arm. Functional treatment by occupational exercise should be started with the arm at shoulder level. The arm may be supported either on a table or by a sling suspension. Resistance is added as tolerated. With increase in strength, the support may be lowered so that work is done at a lower level, and ultimately the support may be removed. Then working position of the unsupported arm may be gradually raised so that it has to be held against gravity.

## RADIOLOGY

### THE SPECIFICITY AND RELIABILITY OF ROENTGENOGRAPHIC DIAGNOSIS

ALL DOCTORS know that no radiologist is able to do one-half in diagnosis or treatment that the lay people think they can. A good many doctors expect too much of the radiologist and his methods.

1. L. J. Yamshon, Los Angeles, in *California Medicine*, Aug.

1. M. C. Sosman, Boston, in *New Eng. J. of Med.*, June 1st.

An eminent radiologist<sup>1</sup> of vast experience writes helpfully on what can be reasonably expected.

Of the lesions demonstrated, how many can one identify etiologically or histologically with a fair degree of certainty? The reporting of incidental lesions of usually minor clinical import such as old pleurisy, calcified tuberculosis, gastroptosis and hypertrophic spurs, is excluded from this survey.

Much of our accuracy depends upon the mathematical probabilities in a given case or set of circumstances. Our diagnoses are based on disturbed morphology in the great majority of cases—certainly, well over 90 per cent.

The wise roentgenologist may withhold or qualify his final opinion, or indicate what test is necessary to confirm or remove his suspicions.

After more than fifty years of use in diagnostic medicine, the roentgenographic method of physical examination has come to a high level of accuracy: it is now the most widely used of all consultative methods. We are able to demonstrate and then, of those perceived, to identify, significant lesions in the various anatomic systems as follows:

System	Demonstrate %	Identify %
Lungs .....	95	75 to 80
Gastrointestinal tract .....	80 to 85	90
Bones .....	90	95
Genitourinary tract .....	90	90
Brain		
Plain films .....	47	50
Special techniques .....	98	30
Gallbladder .....	80	99*

\*Of all cases

In many cases failure to demonstrate a significant lesions as the cause of symptoms or signs excludes many or all of the usual causes of such symptoms.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### ESTROGEN NOT THE MAIN RELIANCE IN TREATMENT OF THE MENOPAUSE

SYMPTOMS of "the menopause" arise in many women while they are still menstruating and while their estrogen level is still high. In others there are no symptoms even though ovarian function has ceased completely. There is evidence to support the belief that this is due to the variation in the stability of the vegetative nervous system and its ability to adjust to stress and strain. A woman who has a highly sensitive nervous system may develop "menopausal" symptoms before she stops menstruating; she often has similar symptoms with the variations in endocrine balance each month with menstruation. A woman who has a stable vegetative nervous system can tolerate a complete de-

cline in ovarian activity without having any symptoms.

A woman prone to be gloomy and depressed at the time of her periods or when under strain will usually show similar symptoms at the menopause. If she is irritable or has rheumatic complaints or headache or gastrointestinal troubles, these symptoms will become more severe at the climacterium. In other words, those systems which have given evidence of weakness earlier in life are most likely to give trouble under the strain of the glandular changes occurring at the menopause. In almost all cases, however, symptoms of vegetative nervous system imbalance predominate.

The rise and fall of ovarian function in women is a normal physiological process, and treatment with estrogens to prolong or sustain a higher estrogen level in the blood is an unnatural, artificial and at times a dangerous practice.<sup>1</sup> It would seem much more logical to treat the imbalance of the oversensitive vegetative nervous system which is unable to withstand the stress of the change in ovarian activity, rather than to concentrate on treating the glandular system which is behaving normally and going through its regular phase of declining activity.

If a woman has a quarrel with her husband, or is worried about anything, or if her resistance is lowered by infection, she is likely to find her previous estrogen dosage inadequate to control her symptoms. This is further evidence that the vegetative nervous system imbalance is the basic cause for the symptoms.

Novak states that only a minority of women require organotherapy, and Hamblen rightly comments that when psychotherapy and mild sedatives will suffice, there is no need for organotherapy.

The great majority of patients will get adequate relief from proper encouragement and small doses of drugs that stabilize the vegetative nervous system. Usually the dose can be decreased and stopped entirely in five to six months. No ill effects have been noted, no habituation and there is no worry about bleeding or cancer.

An excellent combination for this purpose is: ergotamine tartrate for its effect on the sympathetic nervous system; belladonna for its effect on the parasympathetic nervous system; and phenobarbital for its effect on the central nervous system. These drugs can be obtained combined in suitable dosage in tablet form. (The combination referred to is Bellergal, Sandoz.)

If hot flushes and chills are the chief complaints the best results are obtained by giving estrogens in gradually decreasing doses combined with the stabilizing drugs mentioned.

This treatment started ten days before a men-

1. L. J. Harris, in *Canad. Med. Assn. Jour.*, March, 1948.

strual period and continued through the period will often prevent severe dysmenorrhea and many other menstrual symptoms which are autonomic in origin.

The logical treatment for the menopause should be: (1) Reassurance or psychotherapy in all cases. (2) No other treatment in very mild cases. (3) Autonomic nervous system drugs in moderate cases. (4) A combination of estrogens and vegetative nervous system drugs in severe cases, the estrogens not continued longer than a few months, the other drugs stopped within three to six months and then used only as required. (5) Treatment of specific systems as indicated, i.e., bromides for restlessness and irritability; advice as to diet and elimination for gastrointestinal symptoms; heat, salicylates and massage for arthritic symptoms, and so on, paying particular attention to the patient's complaints.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### WHAT SHOULD THE TRUSTEES REQUIRE OF THE BUSINESS ADMINISTRATOR?

FROM serving as both hospital administrator and as trustee for a number of years, I have learned that there are a great many problems that are hard to understand unless one has had experience in both capacities. In a broad sense the trustees are directly responsible for helping sick humanity to regain their health. The function of the trustees is an overall function; it is necessary that the departmental detail work be supervised by an administrator who should carry out rules and regulations in the best way possible both professionally and financially.

The hospital administrator's duties as a collector have become a great deal less time-consuming and worrisome during the last several years. In this respect the situation is improving yearly because of the popularity of hospital insurance. In the near future it is not improbable that 90 per cent of hospital patients will have this insurance. This has prevented for the administrator many headaches, and it is a long step forward in hospitalization, but this step did not come of its own accord. Doctors and hospital administrators for years attempted to institute such a sickness insurance, but they were met with a tremendous amount of criticism from some of the leaders in the medical profession and particularly the A. M. A. This was carried so far, I am told, that a few doctors were actually turned out of the A. M. A. because they sold group sickness insurance. Finally, however, the demand was so great and those of us who were interested in hospital administration were so persistent that the A. M. A. ceased to fight, and started to boost, hos-

pital insurance.

Besides making collections, the two other main duties of the administrator as financial agent are purchasing economically and the providing personnel services. Two main thoughts should present themselves to the purchasing administrator—*do we need* this piece of equipment? and how far in advance should one purchase supplies? This can be determined intelligently from records of quantity of a certain supply used during the last several years. It should not be forgotten at this point that hospital personnel should be held responsible for returning to the purchasing agent, or to someone designated by him, all worn-out or broken supplies and equipment.

The heavy cost of the personnel service is the biggest problem that the hospital administrator has today. Labor, skilled and unskilled, is disturbed and difficult. The national administration stimulates in these persons uncertainty whether they are being cheated every day they work or whether they should be satisfied with their present salary. If the salary of one employee is raised immediately all the others want a raise. This is particularly true in the nursing profession. To add insult to injury and migraine to a headache, the leaders of the nursing profession have purposely produced a tremendous scarcity of graduate nurses. It seems that difficulties in this regard have caused more failures among administrators than any other one thing. It will take fortitude equal to that of our forefathers who fought for liberty to withstand the impact of this particular situation.

The supervision of the physical plant of the hospital is also one of the duties of the business administrator. Frequent inspection tours are required here, in order to locate and have repaired defective parts and to do the necessary painting and remodeling from time to time. One has only to be interested in the hospital and willing to take the necessary weekly tour in order to keep up with the needs and requirements for his building.

Good nursing service will be the result of good nurses properly supervised and properly organized. In this the business administrator plays a large part, for he has the authority to hire and fire every one of the personnel. He should be a man of ability and of strong conviction, for unless he is, this trained group of professional nurses will brow beat him into promising shorter hours, longer vacations and more extended sick leaves, plus more nurse aides, maids and orderlies to wait on them. Yielding to this pressure has the same effect that appeasing Hitler, Mussolini and Stalin had on national foreign relations. The duty of the nurse is clear. She should do any and all things which make for the comfort and welfare of her patient and should enjoy doing so. If she does not, it is poor



policy for the business administrator to attempt to reform her "from within out." He should make frequent rounds at all times of the day and night through his hospital so that he can get first-hand information as to whether his nurses are busy with a smile or lagging with a frown. He will also gain an insight into his nursing service by frequent conversations with the patients both in their rooms and when they come to the business office. If several complaints are turned in against a nurse, there is not much hope for improving her, and he should immediately replace her either with nobody or with new blood of some kind. I know of one large institution that hires thousands of people each year. The policy there is: if you make one mistake, we will help you; if you make two mistakes, we will help you out, and someone else will be given your place. This may be a little drastic, but it is my firm conviction that the average business administrator is entirely too lenient with his professional personnel. The basis for this is probably fear that he will not be able to replace this unsatisfactory nurse.

Now what should the trustees expect of a business administrator? The administrator should understand when he takes the job that he will be held responsible for the performance of everyone under him, because everyone under him is there as a result of his authority to employ them. Excuses do not satisfy boards of trustees. For the administrator to say that he has not had time to carry out certain orders merely irritates the board. An administrator of any worth makes it his business to carry out the order if it requires staying over his usual time, half of the night or longer. He is not hired by the clock; he is not paid by the clock; he is given a job with a great responsibility and with great authority. He has had entrusted to his care an investment of one quarter of a million to four million dollars, many thousands of dollars a year to be spent in operating. He has been given the authority to hire and fire the entire personnel of the institution, and more often than otherwise he is being paid a larger salary than is any of his schoolmates who have gone out to work for someone else. The trustees have a right to expect that he be enough of a business man to meet current expenses and put aside a fair amount which will be needed for replacements and expansion of the physical plant, and against periods of depression.

The trustees have every right to expect him to collect the fees from the patients according to the rules and regulations laid down by the Board. Those patients who do not pay according to that rule should receive the personal attention of the administrator until their bills are paid in full.

In purchasing supplies and equipment, the trustees have a right to expect him to shop around for

prices, to take advantage of special reductions offered by the various equipment and supply houses and of all cash discounts obtainable. They have a right to expect him to buy only what is needed and not just what the staff doctors and the nursing personnel request. A good administrator will keep a perpetual inventory from which any trustee can learn what the hospital has on hand and what is being used in large quantities. The trustees have a right to expect that the administrator will keep up with the salaries paid in similar institutions for various personnel. Because one individual threatens to resign is no reason for the administrator to lose his head and feel that the institution can not be operated without this one employee. If a department is operating to the satisfaction of the patients and to the budget, he is only creating trouble for himself when he fails to show recognition and appreciation of the efficiency of that department. The trustees have a right to expect that he will make a daily visit over the entire hospital keeping an eye on every department, every room and every patient. If this takes one hour a day, the time could be spent in no better way.

Above all, the trustees have a right to expect that the nursing service be satisfactory to the patients and their doctors. The administrator should concern himself with learning the attitude of every patient discharged as to the nursing service rendered. When several doctors complain to him about the conduct and attitude of one nurse, it is high time that this nurse be called into his office and told that her services have not been satisfactory but that she will be given one more chance. The nurse knows when she decides on this profession that she will be held responsible for faithful and ethical service to her patient, and if she is not willing to give this but is willing to cheat her sister nurses out of their standing, little sympathy should be lost on her.

It is impossible for the trustees to give enough time to the institution so that they may be familiar with every detail and take care of all the business connected with the operation of the institution. Therefore, they hire a business administrator and give him large responsibilities with large authority, a great job to do with an opportunity to do it. They have a right to expect this administrator to be economical, tactful, sympathetic, honest, a disciplinarian, a man with strong convictions. They have every right to expect him to operate their hospital as well as other such hospitals are operated. If he does not do this, the trustees have the right and the duty to replace him, just as he has the right and duty to replace those working under him who are not serving satisfactorily. It is not impossible for a hospital administrator to fulfill the requirements of any good board of trustees.



## SURGERY

WILLIAM H. PROLEAU, M.D., Editor, Charleston, S. C.

### ANTERIOR RESECTION OF CARCINOMA OF THE RECTUM AND RECTO-SIGMOID

For the past few years there has been a strong tendency by many surgeons to preserve the anal sphincter in operating for the cure of carcinoma of the rectum and recto-sigmoid. Previous to this the abdominoperineal resection was generally practiced. It permitted a wide excision of the bowel and the adjacent tissues, reducing to a minimum the likelihood of local recurrence. To avoid the necessity of a colostomy is most desirable, but not an end in itself. It should not be practiced at the expense of diminishing the chances of complete excision of the carcinoma.

The difficulty is to determine in which cases the anal sphincter can be safely preserved. In order to arrive at some conclusion in this respect, Dr. Garlock and Dr. Ginzburg<sup>1</sup> appraised the operation of anterior resection in 163 cases. They emphasize that the line of demarcation between the rectum and the sigmoid is not the peritoneal reflection to the bladder in the male and to the vagina in the female, but it is where the mesosigmoid ceases to exist as such and the peritoneum instead of encircling the bowel leaves the posterior and lateral aspects and merges with the pelvic peritoneum. They further state that the line of bowel resection should be three inches below the margin of the tumor. The cases were graded according to the distance of the tumor from the anal orifice. In those cases in which the level of the growth was between three and four and four and five inches the combined suture line and pelvic recurrence rates were 37.8 and 53 per cent, respectively. At the levels of five to six inches and six to eight inches the corresponding recurrence rates were 20 and 5.8 per cent, respectively. They conclude that the operation of anterior resection for carcinoma should never be done for carcinoma below the three-inch level, and only rarely if ever for growths below the five-inch level. The operation is applicable only where the growth is above the five-inch level.

1. Garlock, J. H., and Ginzburg, L.: *S. G. & O.*, 90:525, 1950.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### AUREOMYCIN FOR SOME DISEASES OF THE SKIN

A LONG ISLAND doctor<sup>1</sup> reports favorably. During oral treatment of some cases of herpes zoster, severe pain vanishes in 12 hours although lesions persist unchanged for three weeks; in others the

eruption is abolished while pain continues. Ointment alone may have practically the same effect. Combined local and oral administration may cure both eruption and symptoms.

Sycosis vulgaris improves remarkably two days after the first application of ointment and disappears in two to six weeks. To prevent recurrence aureomycin must be continued two months longer. Results are excellent after total failure of other agents.

Chronic furunculosis of unknown etiology is slowly controlled by ointment applied twice daily for eight weeks. Treatment is less effective for boils resulting from an occupational irritant such as fuel oil.

Pustules and furuncles of acne vulgaris are cleared by aureomycin ointment applied t.i.d. for three weeks. The comedones and seborrhea require separate treatment.

Deep ulcers of the legs may heal when secondary infection subsides. For skin lesions due to tertiary lues, varicose veins, ecthyma, or stasis and trauma, ointment is used once a day and covered with a layer of cellophane. Both ambulatory and hospital patients benefit.

Pyoderma with chronic epidermophytosis of the feet or groin may be cured by the ointment in 10-12 days. Tinea apparently is not affected.

Pemphigus occasionally recedes with daily oral doses of one or two gm. Remissions may last a year or more. Absorbable ointment might have some value.

Dermatitis herpetiformis is resistant. The only effect of treatment is some relief of itching, probably by the petrolatum base.

With the doses recommended, no contraindications to aureomycin are noted. The drug, unlike penicillin, apparently does not cause primary irritation or sensitization. No reactions occur when the capsules are given several months after the salve.

1. A. J. Philip, Jamaica, N. Y., in *Urol. & Cutan. Rev.*, 54: 223-224, 1950.

## OXYGEN THERAPY

AMONG the valuable remedial agents available to the doctor, oxygen takes high rank. Suffin<sup>1</sup> tells us we should recognize its need earlier, at the time that it will be of most benefit.

The first essential in oxygen therapy is the early recognition of oxygen want. This want develops insidiously and may become quite marked without noticeably disturbing the rate or volume of breathing. The most reliable sign of early O want is increase of pulse rate, and as it is relieved by excess O, the pulse returns to its original rate. If there is no change in pulse rate with the administration of the proper concentration of O, it may be assumed

1. A. M. Suffin, Hempstead, N. Y., in *Med. Times*, Aug.

that the tachycardia is not due to oxygen want. If O is discontinued and the pulse rate rises, the patient still requires excess O; if the pulse is unaltered, the excess O is no longer needed.

Cyanosis is the obvious sign of hypoxia, but it cannot be relied upon as a guide, as it may be absent in patients with severe anemia. Patients who show delirium, tachycardia, dyspnea or insomnia are benefited by O inhalation, even though there be no cyanosis.

When the physician decided that O therapy is indicated, he is then confronted with two problems. How severe is the patient's degree of oxygen want, and what percentage of O in the inhaled mixture will be sufficient? What method will provide the concentration of O desired and be best for the patient?

The advantage of mask therapy is its ability to provide high concentrations of O economically.

Pure oxygen is not irritating to lungs when administered by a mask, for two days and in all probability for four days. Possibly the removal of the mask from time to time, for food, medication or cleansing, is the reason for this tolerance.

The gas causing abdominal distention is 70 per cent nitrogen. Inhalation of pure O will remove accumulated N from body cavities and tissues in a short time.

Oxygen under pressure is used in the treatment of acute pulmonary edema; the application of positive pressure in the alveolus, and thence to the external capillary wall in the alveolus, mechanically opposes the hydrostatic pressure in the capillary and tends to prevent the oozing of the serum into the alveolus.

Figures are given showing that the mask is the most efficient, as well as the most economical method of administering O (no tent or special room needed)—another argument for the fact that the vast majority of treatments can be just as well given in home as in hospital, and at a fraction of the cost.

## PROCTOLOGY

RUSSELL BUNTON, M.D., *Editor*, Newport News, Va.

### PROCTOLOGY IN INFANTS AND CHILDREN

IN CHILDREN from two to ten the most common proctologic problem is pin-worms. This is almost a universal infestation and may produce symptoms from mild anal itching to severe pruritis and abdominal cramps. In some cases the oxyuriasis infestation causes inflammation of the appendix necessitating operation. The diagnosis may be quite difficult but the pin-worms can usually be seen at night after the child has been in bed for an hour

or two and the mother can easily examine the child and report to the physician the presence of these threadlike worms. Application of cellophane to the anus at night will usually show the presence of worms or the ova can be found on the cellophane the following morning. The treatment consists of the administration of gentian violet in enteric, coated tablets, the dosage varying from one-sixth of a grain daily in small children, to one-half grain three times daily in adults. The treatment should be continued for one week, discontinued for one week, and then given again for another week. Care in washing the hands will markedly decrease the chances of reinfestation as in most cases the eggs get on the hands and are transferred to the mouth to begin the cycle again.

Prolapse of the rectum is not an uncommon finding and may prove quite troublesome. Non-surgical treatment is usually advised and demands close coöperation between the physician and the parents. Medical treatment consists of the use of mineral oil by mouth together with the use of a special arrangement for passage of the stool. This consists of placing two boards on the commode so that the buttocks do not spread apart in the bowel straining. If the prolapse recurs the mother should be instructed as to placing the bowel into the body and then during the entire course of treatment the buttock should be strapped tightly together with adhesive except when the child defecates.

*Editor's Note.*—About the time of the Revolution, a physician at the Court of the King of Sweden wrote a wonderful book on Diseases of Children. Dr. W. C. Davison has a copy and he lent it to me a number of years ago. This book directs that a prolapsed rectum be cleaned with warm water and a soft linen cloth, then with wine, then that it be anointed with oil and, while held between the fingers, it be pressed in beyond the sphincter. To prevent recurrence it is directed that the child at defecation be seated so high that his feet can not reach any support, and so he can not bear down hard.—J. M. N.

THE USE OF OXYGEN IN COMATOSE STATES  
(H. L. Motley, Philadelphia, in *Bull. N. Y. Acad. Med.*, July)

The two essential factors in the maintenance of normal respiratory gas exchange in comatose subjects are: (1) an inspired  $PO_2$  of sufficient magnitude to saturate the arterial blood and (2) adequate ventilation to wash out the  $CO_2$  effectively, thus preventing the development of respiratory acidosis. Administration of high concentrations of O controls the first factor in most cases, but on ambient breathing alone the second factor is often inadequately handled.

$CO_2$  should not be used with the oxygen in respirators, resuscitators or insufflators for treating asphyxia because the use of 5%  $CO_2$  only increases the acidosis in apneic subjects in need of artificial respiration.

The preferred minimal oxygen-helium mixture is 30% O and 70% helium.

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As is true of most Medical Journals, all costs of cuts, must be borne by the author.

GODSPEED!\*

MARTIN H. FISCHER, M.D.\*\*

The great medical scholar and scientist, whose latest address is here reproduced, has been long known and appreciated by the editor, as worthy to be classed with his dear friend, Dr. Cyrus Thompson.

I look upon you as the victims of a plethora of instruction. May I reverse the trend by asking you in the next moments to turn upon us oldsters and to tell us what it is that you hold.

I begin by asking you to take stock of yourselves. That man is an ass who overestimates himself; but he is equally the ass if he underestimates his potentialities. Gounod, as a 14-year-old boy, was praised to his poverty-stricken widowed mother by the music master to whom he had been apprenticed: "The boy knows everything; only he does not know it himself." To which Gounod replied in his diary: "But I knew that, too—none but an ass lack self-consciousness."

Apply this lesson to yourselves. When a Grade A medical school declares you a *doctor of medicine* and when a governmental unit thereafter *licenses* you to practice, observe that you stand a *free man*. You have been made one with the ancient company of the physician. As in our lodges, further and varied degrees may be bestowed upon you, yet all of them are but unnecessary honorifics. Only the first three of any such set, count—you were initiated, you were educated, you stand approved. Guard this right to independent thought and action inherent in your M.D. degree, as no other. This prerogative of yours to practice in good and individual conscience will be challenged. Meet the challenge even as you become intern, houseman or aspirant to practice in special field. The rights and privileges bestowed upon you as "doctors of medicine" are the one and only absolute.

Forgive me if I say that the hours of preparation for what is your job have grown too long. Four years of required high-schooling followed by two years of college which repeat merely what should have been learned earlier, are too much. The history of science (with which I include medicine) is the history of boys. Youth only attacks the invulnerable and accomplishes the impossible, for it has enthusiasm (that means that it is possessed of a god and is crazy), courage and strength.

Get at this life's job of yours as quickly as you can. If you think that I am directing you towards general practice or into a place where you must as an individual assume responsibility for the individ-

\*Address to the initiates into A.O.A. from the College of Medicine of the University of Cincinnati, June 9th, 1950, published in *Cincinnati Journal of Medicine*, Aug.

\*\*The Joseph Eichberg Professor Emeritus of Physiology, College of Medicine, University of Cincinnati.



ually sick man, you are exactly right. Serve the demands of the day but refuse special labels—no designation supersedes the appellation, "Doctor."

I have heard many of you counter at this "commencement" that you do not know enough. If you are of the right sort, you will never know enough.

Your business in life is the directing of a crippled ship. Steer as best you can for the safe harbor. It requires that you know where the north lies. If not sure, you must still steer as though you were.

Be of good cheer! If you deem yourself not as good as you hope to be, you are not as bad as you think yourself, either. In 95 per cent of the patients who will come to you, you are qualified to give competent counsel, both material and spiritual, *now*. Self-education through experience and observation may raise you into the 99 per cent group. Let the book-learned haggle over the remainder.

For more than a century past, the practice of medicine and surgery in U. S. A. has proved itself the greatest in the world. In spite of attempts to alter the grand picture, it is still possible as of the moment for a sick man to visit his doctor and come out with more than a number.

In practical terms, where might any of you take up station? I advise against return to the spot where they call you "Bill" or "Tom." Medical practice is a serious affair and intimacy reduces respect. Choose a spot where life carries its variety. Men who have thought upon the subject, believe that towns of fifteen thousand are ideal. This number will include some priests and ministers, a half-dozen doctors like yourself, some teachers, some lawyers, some judges who think beyond the statutory texts, some so-called businessmen and manufacturers who still follow the ethics of the old-time banker and the fellow craftsman.

As they solicit your help, each will try in his way to render his *quid pro quo*. And what will that net you? As one who did not seek practice but was forced into it, I answer: *Everything!* They will bring you blankets when it is cold, ice when it is hot, potatoes when they are few and—yes—whiskey when the Volstead Law is operating.

Does small town and private practice seem not big enough? Then look up the origins of Benjamin Rush, Oliver Wendell Holmes, Robert Mayer, Hermann Helmholtz, Robert Koch, James Young Simpson, James Mackenzie, Frank Billings, James B. Herrick.

Less seriously said, your patients will bring you a living—and quickly. Do not strive for too much more. Riches may come to some of you but night club managers, realtors, merchandisers, and gold brick salesmen are better at this game than you. In the circus of life, you get the front seat. It is only to you that the unedited picture is revealed. It is

undisclosed to the politician, the lawyer, the priest even. Observe! For only the truth makes men free.

I close on this thesis. As physiology teaches and as U. S. A.'s Constitution declares, the purpose of life is the pursuit of happiness. You can't get it better than as a doctor. Any hour in your office brings you more romantic excitement than is contained in any novel, mystery tale, "western" or detective magazine. If this association with your patients seem too base, try the companionship of your confreres—in medicine, religion, law or business. If still unsatisfied, seek refreshment and peace with the gods! They abide in your library and stand ready to answer even your night calls.

### HUMPHRY DAVY'S CONTRIBUTION TO ANAESTHESIA

AN ENGLISH PHYSICIAN<sup>1</sup> makes out a good case for the chemist Humphry Davy as the person mainly responsible for the boon of surgical anaesthesia.

In the year 1818, in the *Journal of Science and the Arts*, the official organ of the Royal Institution, there appeared an unsigned annotation drawing attention to the similarity between the action of nitrous oxide and of ether when inhaled. This note has always been ascribed to Michael Faraday; although no evidence has ever been adduced in support.

At the time when his book was published, only one man that we know of paid any attention to his [Davy's] remarks on pain; that man was Davy's close friend, Samuel T. Coleridge. In this sense, Davy's discovery of anaesthesia was abortive, a fact which may seem strange to us with our twentieth-century outlook on suffering, but which is not so strange when we consider the mentality of the eighteenth-century Englishman. Behind that elegant eighteenth-century facade there dwelt a callousness, a brutality, almost unprecedented in history; such advance toward a broader humanitarianism as had been made in the 1770s and 1780s had been largely counteracted by the inevitable reaction induced by the war with revolutionary France. The average physician would have looked upon his theories as the scatter-brained enthusiasm of one who still believed in the school of pneumatic physicians. Thus we cannot blame Davy for the fact that he did not introduce anaesthesia, any more than we can blame his contemporaries because they did not accept the definite proposal that he threw out to them.

Fifty years later man had achieved a new attitude toward suffering; the pain of surgery had become an anachronism in a world bred in the humane tradition.

<sup>1</sup> F. F. Cartwright, in *Proc. Royal Soc. of Med. (Lond.)*, July.



It was no divine revelation which suggested anaesthesia by means of ether to Morton. Morton, a comparatively uneducated man, learned of ether from Charles Jackson. Jackson learned of the fact of anaesthesia from his one-time partner Horace Wells. Wells, in turn, learned of nitrous oxide from the itinerant lecturer, Gardner Quincy Colton, and Colton, in his turn, gained his knowledge of nitrous oxide from Humphry Davy.

Colton, in a published advertisement for his lecture in Hartford, uses the words: "Robert Southey (poet) once said that 'the atmosphere of the highest of all possible heavens must be composed of this gas!'" These words are part of a private letter from Southey to Davy, which was first published in the year 1858, fourteen years after Colton quoted them.

Humphry Davy, first of all men, suggested a practicable means of allaying the agony of surgery. Humphry Davy discovered anaesthesia.

#### STILL FOR THE GENERAL PRACTITIONER AS THE MAIN MAN IN MEDICINE

SOME weeks ago I read an article by a Boston surgeon in which he mentioned medical care starting from "the level of the general practitioner." I wrote His Eminence protesting the derogation of the G. P. He replied quite politely, saying he had no intention of belittling the G. P. Now, that's the crux of the problem. It is what a person says when he is off guard that reveals his deep-down conviction.

Over the past several weeks I have been snatching out, here and there, some expressions showing various attitudes toward the G. P. Read on and you will be entertained, if not instructed.

In a subsequent number of this journal, the subject will be pursued further.

#### DESTRUCTION OF OUR NATION POSSIBLE ONLY FROM WITHIN (Cinti, *J. Med.*, Aug).

At what point shall we expect the approach of danger? By what means shall we fortify against it? Shall we expect some trans-Atlantic military giant to step the ocean and crush us at a blow? Never! All the armies of Europe, Asia and Africa combined with all the treasurer of the earth in their military chest, with a Bonaparte for a commander, could not by force take a drink from the Ohio or make a track in the Blue Ridge in a trial of a thousand years.

At what point, then, is the approach of danger to be expected? I answer, if it ever reaches us it must spring up amongst us; it cannot come from abroad. If destruction be our lot we must ourselves be its author and finisher. As a nation of free men we must live through all time or die by suicide.

ABRAHAM LINCOLN  
Springfield, Illinois  
January 27th, 1838

It has been suggested<sup>1</sup> that more general practitioners be added to the teaching staffs of our medical schools to "neutralize" the preponderance of specialty men. Several schools are testing the plan, but to date very few have well integrated departments of general practice.

When all hospitals welcome the general practitioner as a member of the staff with hospital privileges based on his competence to perform procedures indicated by his experience and training, only then will the intern accept the opportunities and advantages of serving the public as a family doctor. He should be allowed a representative voice in the affairs of the professional staff. His application for privileges in a specialty section should be judged on individual merit rather than non requirements duplicating those of specialty boards.

An intelligent readjustment of the general practitioner's place in the hospital will do much to remove the current apathy toward general practice among young medical men.

It is worth noting that this doctor is not a specialist.

Of interest and applicability in this connection are some of the contents of an article<sup>2</sup> by the Fitz of the present generation.

In 1865, the first meeting of the American Medical Association after any war was held in Boston. When the delegates came to order on the 3rd day, Dr. Julius Homberger, of New York City, presented an elaborate report, which began with a denunciation of the action of the N. Y. State Medical Society and ended with a resolution asking the A. M. A. to go on record as deploring the publication of advertisements by general practitioners but favoring those printed by men with claims to special skills. He based his plea on the ground that such advertisements afforded the only means by which the public could be informed about how to obtain superior care.

The delegates were men in general practice, of high character, or were well known authorities in their various fields, who preferred to be regarded as doctors rather than specialists and with no additional frills to their names; all were averse to any form of self-sought publicity. They received Dr. Homberger's remarks frigidly. This they made unmistakably clear; they tabled the resolution; when they got around to it they expelled him from the Association, and they asked the Committee on Ethics for a detailed report on specialism at the next annual meeting.

Not long afterward the A. M. A. determined that specialties were proper and legitimate fields of

1. The General Practitioner—Why and How, D. C. Ausman, M.D., in *Wisc. Med. J.*, April.

2. The Rise of the Practice of Internal Medicine as a Specialty, Reginald Fitz, M.D., Boston, in *New Eng. J. of Med.*, April 13th.

practice, and the Humboldt Medical College of St. Louis announced that henceforward it proposed to devote its resources exclusively to the training of students for such fields.

In the summer of 1873, on the front page of the *Boston Medical & Surgical Journal*, there appeared an advertisement specifying that doctors who wished graduate training could obtain it in several specialties at the Harvard Medical School at the rate of \$120.00 a term; they need take no examinations nor pursue a prescribed curriculum, but they would be given a certificate when they left, stating that they had attended a course of advanced study.

The United States being a free country, there was no reason why anyone with a license to practice should not call himself anything he chose, and a magnificent array of framed diplomas calling attention to one's talents was easily obtained to hang on office walls. In those early days, the practice of medicine as a specialty tended to be a racket.

As it gathered momentum in this fashion, the growth of specialism was observed with increasing trepidation by leaders in medicine. Presently they began to complain about it, at first among themselves and later in public. Dr. George Ben Johnston, of Richmond, a distinguished surgeon and president of the Southern Surgical Association in 1897, was one of the first to speak on such an unhealthy tendency before an important medical gathering. He proclaimed that the time had come when specialists must be regulated. Dr. Johnston's point of view was easy to comprehend but not even his prestige was able to overcome prevailing diffidence. Another ten years elapsed before any means for introducing the needed reforms were suggested.

Another non-specialist has this<sup>3</sup> to say:

The place of the general practitioner of medicine in both diagnosis and treatment is of the utmost importance. Because of its great importance, it is worthy of being repeated again and again that a large part of any medical or surgical examination can be well made in the average office. The technique for vaginal and bronchial smears, aspiration of liver and breast substance for biopsy are best referred to the specialist. *After all available facts are assembled the general practitioner is the one best qualified to evaluate their importance.*

A U. S. P. H. S. doctor<sup>4</sup> has made the astounding discovery that "caring for a patient in his home is, of course, not at all a new practice. Patients with various clinical conditions have always received some degree of medical attention in their homes," which he passes on to the few who read a P. H. S. Report, as a prelude to what he has to say for home care in prolonged illness.

Home care, as it has been developed at Montefiore Hospital and as proposed here and abroad for more effective and economical care of patients, connotes uninterrupted medical supervision and treatment through extramural services from the hospital, when the patient can return to his own home and obtain as much or more benefit from treatment than if he continued to occupy a hospital bed.

The concept of home care appeals to the public for many reasons. The most important, perhaps, is the need for a change in emphasis in medical practice to provide adequately for our aging population. Advances in medical technology have enabled most patients to survive at least their first encounter with the more common diseases. Consequently, effort is being directed to the possible solutions of the growing problems of long-term illness.

The cost of facilities and personnel necessary to hospitalize all these patients are rapidly becoming prohibitive. It has been estimated that 70 per cent of those afflicted with a long-term illness can best be cared for at home, provided adequate supervision and assistance are available.

Shindell quotes approvingly on an editorial in a *Public Health Bulletin*:

"It is essential, however, to remember that successful application of the method depends on a high degree of hospital development in the fields of medical staff, social service, nursing, physical and occupational therapy."

On reading the title of Shindell's article, "A Method of Home Care for Prolonged Illness," I thought something sensible had at last come from Bureaucratic Medicine; but, reading on, it became plain that it was but another case of keeping it to the ear, but breaking it to the heart. Instead of being a plan for returning a general practitioner's patient to him, it was blithely taking over the patient, to be ministered to until death us do part, by hospital specialists, made and in the making.

You may ask, Is there no word on the other side? I am glad to be able to cite you instances of specialists accrediting general practitioners with intelligence and energy in the diagnosis and cure of disease.

First to hand is an editorial expression<sup>5</sup> in a high-class publication.

Fear of pain keeps many cancer patients from the physician's office. Dreading surgical biopsy, the cancer victim often waits until his tumor has become inoperable. Some sort of diagnostic method which is both reliable and painless has long been desired. Gladstone has developed a technique whereby living cells can be gathered directly from the tumor, prior to their exfoliation, that can be

3. The Role of the General Practitioner in Cancer Control, R. L. Spire, M.D., Washington, in *Medical Annals D. C.*, July.

4. Sidney Shindell, M.D., in *Public Health Reports*, May 19th.

5. The Sponge in Cancer Diagnosis, Editorial in *The Cancer Bulletin (Texas Edition)*, May-June.

carried out as a part of routine office examination.

Any lesion which can be seen with the naked eye or with an endoscope can be reached with a sponge. The lesion, or suspected tissue, is viewed through a speculum or proctoscope, wiped dry with sterile gauze, and, if the lesion has a necrotic base, the dead tissue in the area is removed. The sponge—which is flat, square,  $2 \times 2 \times 0.5$  cm.—is clamped with forceps along one margin, rubbed gently, at first, over the suspected area; after the sponge becomes wet, it is pressed more firmly. When one flat side of the sponge has been filled with exudate from the lesion, it is turned over and the other flat side is pressed over the area in the same manner. Then the sponge is withdrawn and dropped into a solution of 10 per cent formalin fixative.

The sponge, now containing the cells to be studied, is embedded, sectioned and stained, just as would be any other block of tissue. Usually, the hemotoxylin-eosin stain is employed. Ordinarily more than one sponge is prepared in this manner so that cells will be obtained from a wider area. The best sponge for the purpose is made of gelatin or other protein, because this material will not be dissolved easily by the fixatives or staining solutions. Gladstone prefers a sponge made from Gelfoam No. 12, a product of the Upjohn Company. In order to familiarize himself with the method the physician may obtain a quantity of these sponges and try rubbing them over fresh tumor tissue.

As for accuracy of the method: Gladstone states that he has never rubbed a diagnostic sponge over proven cancer tissue without subsequently finding obvious cancerous material in the sponge.

Following are the author's conclusions, which have hearty endorsement here:

It is too early to predict whether sponge biopsy will find extensive application as a routine diagnostic procedure, but it certainly looks promising. At least, the physician cannot lose by attempting this method as a first step in diagnosis of cancer in certain areas. Of course, he should not be satisfied with a negative report, but Gladstone insists that he will get a positive report if cancer is present. And he will have obtained this report without causing his patient any pain. This fact alone might determine whether or not the patient will keep his next appointment—whether the patient's life will be saved.

A railroader's green light here, meaning another section following.

#### THE MANAGEMENT OF SIMPLE FRACTURE OF THE CLAVICLE IN ADULTS

It is reassuring to have it in writing, from an authority<sup>1</sup> that whatever form of treatment is employed, or even without treatment of any sort,

union can confidently be expected. Quigley's article is all meat. Its essential features are handed on.

The commonly employed figure-of-eight dressing immobilizes neither the acromioclavicular joint, the sternoclavicular joint, nor the fracture site. It simply keeps the ends of the fracture from tearing the soft tissues.

As a rule, fractures in the lateral or proximal thirds of the bone treated by a figure-of-eight splint made of leather and tape or plaster of Paris produce little eventual deformity. Severely comminuted fractures, displaced oblique fractures, and those in the middle third of the bone that will not interdigitate and lock at reduction should be immobilized by an external splint that fixes both the sternoclavicular and acromioclavicular joints, or by internal fixation.

Nonoperative management: A table is placed with one end against a wall, and the patient sits with his back to the wall and with a piece of plank 2 cm. thick beneath the buttocks. A broomstick is laid between the wall and the edges of the plank at an angle of  $45^\circ$  from the horizontal. A felt pad is placed against the dorsal spine, and the patient lies with the vertebral column against the broomstick and the arms hanging on either side of the table. The fracture site can then be infiltrated with novocain, and manipulations can be carried out without discomfort. Reduction and interdigitation of the faces of certain transverse fractures can often be accomplished by seizing the fragments through the skin with towel clips. After suitable padding, plaster bandage is applied rapidly over each shoulder crossing over the broomstick, care being taken to compress it against the thorax rather than upward into the axilla. A bulky mass of plaster does not allow full adduction of the arm and has been known to cause radial-nerve paralysis. Before hardening occurs the broomstick is withdrawn and replaced outside the plaster. The patient remains lying against the broomstick until the splint has hardened, when a final trimming is carried out. Molding of the plaster to force the shoulder girdle outward and backward is automatic.

External immobilization can be carried out with the same apparatus. Plaster is carried down to the elbow, to the lower thorax and over the opposite shoulder. While setting, this plaster is molded over both clavicles by placing two sausage-shaped bags of shot in the supraclavicular fossae. Surprisingly little disability or discomfort occurs, and if good reduction has been achieved little callus results.

Open reduction and internal fixation should be reserved for the rare cases in which damage to the underlying blood vessels and nerves is imminent, and those in which the occupation of the patient requires minimal deformity.

1. T. B. Quigley, Boston, in *New England J. Med.*, Aug. 24th.



## NEWS

THE CARTERET COUNTY MEDICAL SOCIETY held its regular monthly meeting at the Morehead City Hospital the evening of August 14th, a dinner meeting, the hospital acting as host.

A moving picture was presented by Dr. Theodore Salter on the subject of Urological Disease. The Executive Secretary of the Craven County Red Cross, Mr. W. H. Wooters, New Bern, discussed the desirability of our Society joining with the Craven County Medical Society in establishing a blood bank. The local Society showed much interest in the proposal and appointed Dr. B. F. Royal to confer with representatives from the Craven Society and the American Red Cross.

It was pointed out that, in view of the present critical world conditions, such a program becomes imperative in this area with the possibility of submarines operating in nearby waters and, furthermore, with Camp Lejeune and Cherry Point Marine Air Base (both natural points of enemy bombing attack) only a few miles away from Morehead City.

*N. Thomas Ennett, M.D., Cor. Sec.*

### DOCTOR ROSCOE McMILLAN HONORED

"Dr. Roscoe Day," honoring the 40th year of general practice in North Carolina by Dr. Roscoe D. McMillan, President of the State Medical Society and recently-elected General Practitioner of the Year, was celebrated at Red Springs on September 1st. Dr. Roscoe was born at Red Springs, the son of Dr. B. F. McMillan, and nephew of Dr. Luther McMillan, both of whom practiced at and about Red Springs throughout their professional lives.

DR. ARTHUR J. DRAPER announces the opening of new offices for the practice of Internal Medicine at 212 North Torrence Street, Charlotte, North Carolina.

DAVIS HOSPITAL, Statesville, N. C., announces the association of Dr. F. W. Gross, in Otolaryngology, and Dr. Charles R. Blake, in Ophthalmology.

THE DOCTORS OF MARLBORO COUNTY, S. C., have recently equipped a sick room in the Bennettsville schools in memory of Doctors Douglas Jennings, Charles R. May and T. H. Smith.

DR. WALTER G. COKER is now associated with DR. GEORGE R. WILKINSON in the practice of internal medicine at Greenville, S. C.

### MARRIED

Dr. Howard Russell Masters of Richmond and Miss Sarah Elizabeth Huneycutt of Appalachia and Richmond were married May 13th.

### DIED

Dr. Roshier W. Miller, Professor Emeritus of Materia Medica and Therapeutics at the Medical College of Virginia and member of the Richmond School Board for 26 years, was injured fatally in an automobile collision near Petersburg July 14th.

Dr. Miller was born in Washington Jan. 31st, 1870. He attended the Philadelphia College of Pharmacy and Science and in 1894 entered the University College of Medicine, Richmond, from which he was graduated in 1897. From that year till four years ago he taught pharmacy, chemistry and nervous and mental diseases, first in his alma

mater, later, after its consolidation with the Medical College of Virginia, in the latter institution. In the Medical College, Dr. Miller served as instructor and later dean of the School of Pharmacy. He retired from active service with the college in 1947. He continued his private practice until his death.

Dr. C. H. Hoover, 74, died July 26th at his home at Crouse, N. C., after suffering a heart attack. He had practiced medicine in Lincoln County for 50 years. He was a native of Lincoln County, attended the old Rutherford College and the Medical School at Grant University in Chattanooga, Tenn. He received his M.D. degree from Baltimore Medical College, now the University of Maryland.

Dr. Samuel Gambill, 63, died unexpectedly of a heart attack August 12th at his home at Elkin, N. C. He retired from active practice three years ago, due to ill health. Reared in Wilkes County, Dr. Gambill received his preparatory education in Wilkes schools and Oak Ridge Academy. He was graduated from North Carolina Medical College, Charlotte, in 1912. He first located for medical practice at Doughton, later at Dobson. While there he served as mayor, and as chairman of Surry County Board of Education. He organized Surry's first county Public Health department. He located afterward at North Wilkesboro and was a member of the staff of Davis Hospital, Statesville, one year before going to Elkin in 1924.

Dr. W. G. Bandy, 67, prominent Lincolnton, N. C., physician, died August 24th, in Richmond, Va., of a heart attack. Burial was in the Matthews cemetery on the Lincolnton-Maiden high. Honorary pallbearers were members of the Lincoln Medical Society, the Lincolnton Masonic Lodge, and deacons of the First Baptist Church.

### IMPORTANT PRICE REDUCTION ON CORTONE

Merck & Co. announce the price of Cortone—a hormonal substance that has shown dramatic effects in the control of most rheumatic diseases, including rheumatoid arthritis and rheumatic fever—to hospitals reduced from \$95 to \$50 per gram. This is the fifth in a series of reductions which have, in one year, brought down the price of Cortone to one quarter of the initial price of \$200 per gram.

Good supplies of Cortone are available to more than 6,500 hospitals which have facilities that meet certain minimum requirements. For the present, the drug is to be used, during the initial period of treatment, only in the cases of patients treated in these institutions. After initial treatment, the physician may provide continued treatment in his office or in the patient's home.

In rheumatoid arthritis, after a day or two of higher dosage, the patient may be placed on 100 mgms. daily, and this dose may, in many cases, be decreased stepwise until no more than 100 milligrams every other day need be taken. Thus the cost to hospitals for material for maintenance dosage is \$2.50 to \$5 per day. The treatment of some other important diseases requires only several days or a few weeks. Many of these cases can be controlled with a total amount of Cortone not exceeding one gram.

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## BOOKS

**QUESTIONS AND ANSWERS:** Volume 3, edited and compiled under the supervision of J. F. HAMMOND, M.D., Associate Editor, *The Journal of the American Medical Association*, American Medical Association, 535 N. Dearborn Street, Chicago 10, Ill. 1950. \$3.00.

These questions and answers have been selected from those published in the *Queries and Minor Notes* Department of the *Journal of the A. M. A.* 1943-1949. The selection has been made with discrimination and the result is a great amount of practical information on every-day subjects, much of which would be very hard to find in formal texts.

**FRIEND OF THE PEOPLE:** The Life of Dr. Peter Fayssoux of Charleston, South Carolina, by CHALMERS G. DAVIDSON. Published by The South Carolina Medical Association. *The R. L. Bryan Company*, 1440 Main St., Columbia 1, S. C. 1950. \$2.75.

This is an interesting story of an interesting man who was conspicuous at once as a patriot, a practitioner of medicine in peace and in war, a statesman, and a fine personality of Charleston in the Revolutionary period. He was a member of the St. Cecilia Society and of the Order of the Cincinnati and the first president of the South Carolina Medical Association.

**CEREBRAL PALSY,** by JOHN F. POHL, M.D., Orthopedic Surgeon, Michael Dowling School for Crippled Children, Minneapolis. *Bruce Publishing Company*, St. Paul, Minn. 1950. \$5.00.

This little book states the problem, lays down the general principles of management and then describes in detail the techniques by which these principles are put into effect, illustrating the text with 130 helpful illustrations. It is by far the most valuable book on this subject that has come under the eye of this reviewer.

**ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION,** With the Comments That Have Appeared in the *Journal of the American Medical Association*. 1949. *J. B. Lippincott Company*, East Washington Square, Philadelphia.

**ATOMIC ATTACK: A Manual for Survival,** by JOHN L. BALDERSTON, JR., Physicist-Engineer at Oak Ridge, Tenn., 1943-47, Assistant Director, Association of Scientists for Atomic Education, 1947-48. Presently, Radiostope Research Consultant, Los Angeles, Calif., and GORDON W. HEWES, Analyzer of Japanese target-cities for the 20th Air Force, World War II, Presently, Assistant Professor of Anthropology, University of Southern California. Published under the auspices of Council on Atomic Implications, Inc., University of Southern California; sold and distributed by Culver Products Co., 3631 Eastham Drive, Culver City, Calif. 1950. \$1.00.

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**NEW AND NONOFFICIAL REMEDIES:** Contains Descriptions of the Articles Which Stand Accepted by The Council on Pharmacy and Chemistry of The American Medical Association on January 1st, 1950. *J. B. Lippincott Company*, East Washington Square, Philadelphia. 1950.

#### SUCCESSFUL TREATMENT OF HYPERHIDROSIS USING BANTHINE

EVERYBODY wants to know what will effectively and comfortably reduce excessive sweating. Grimson<sup>1</sup> offers help.

Among 144 patients under treatment for peptic ulcer or other gastrointestinal disorders using banthine, several commented on dryness of their hands. Opportunity to treat a patient with pronounced hyperhidrosis was therefore welcomed.

A woman, 25, had excessive sweating of hands, axilla and feet for a year, becoming steadily worse; use of atropine had not helped.

Forty-five minutes after ingestion at 4 p. m. of two 50 mg. banthine bromide tablets, hands, axilla and feet become warm and dry. No sweating again until the following morning. During the next week one 50 mg. oral tablet was taken q. 4 h. and sweating diminished. The following week 75 mg. q. 4 h., sweating further diminished. During a period of strain she tried two tablets and the hands became entirely dry. The third week two tablets were taken q. 4 h., and she perspired "very little or none at all." Following this she used 50 or 75 mg., q. 4 h., much of the time, 100 mg. whenever strenuous work was anticipated and "when she dressed for a date." Dryness following 100 mg. started 30 to 45 min. after the medication and lasted four or five hours. Side effects, including dilatation of the pupil, dryness of the mouth and a moderate tendency to-

1. K. S. Grimson et al., Durham, N. C., in *J. A. M. A.*, Aug. 12th.

ward constipation troubled her little, and she is well pleased.

We have treated three additional women: one, aged 22, who had had excessive sweating of hands and feet as long as she could remember; another, aged 30, who described excessive sweating first noticed in the eighth grade, and another, aged 27, who had excessive sweating for nine years. Results in all cases are like those reported by the first patient. An effective and well tolerated anticholinergic drug should control hyperhidrosis.

#### NEVER GIVE A WOMAN HER HUSBAND'S BLOOD

(Bruce Chown, *Canadian Med. Assn. J.*, October, 1949)

The husband is the first person thought of as donor for a transfusion to his wife; yet such practice may produce fatal erythroblastosis in later fetuses. Even though the husband's blood may be of the same A-B-O group and same apparent Rh type as his wife's, the pitfall is the possible transference, through parental genes, of an unusual blood type which would cause maternal sensitization.

**BLOOD PRESSURE OF HEALTH HAS WIDE RANGE.**—Since systolic pressures of 160 to 190 and diastolic pressures of 100 to 110 are not uncommonly observed after the age of 50, such readings do not constitute evidence of ill health. In evaluating the status of these patients, one should first determine cardiac function. If evidence of coronary disease, cardiac enlargement or heart failure is found, therapy should be directed toward these conditions rather than toward the hypertension.

—A. M. Master et al., New York, in *J. A. M. A.*, Aug. 26th.

#### BCG VACCINATION

(H. C. Stewart, M.D., N. Y. State Dept. of Health, in *Health News*, Dec., 1949)

BCG, Bacillus of Calmette and Guérin, two French scientists who, using a strain of bovine T. B. isolated in 1902, sharply reduced virulence of the organism after repeated passage of an artificial medium. In 1908, these investigators announced they had developed a strain of bovine T. B. which had no virulence for cattle, 12 years later that this BCG culture was harmless to man. Later studies confirmed this and showed a lowered illness rate and death rate for tuberculosis over varying periods of time in these groups.

BCG is now widely accepted as an effective tool when used in conjunction with other techniques of tuberculosis control.

The vaccine is given only to those persons who are negative reactors to the tuberculin test. Over many centuries, the human race has become fairly resistant to tuberculosis. The majority of persons sooner or later become infected with tubercle bacilli and are positive reactors to the tuberculin test. They do not, however, in the vast majority of instances, develop tuberculous disease. Although a certain immunity is gained through infection with the disease germ, a chance infection with virulent germs is not a satisfactory method of immunization. An infection with a mild and harmless strain of T. B. can be overcome by protective antibodies which may combat a future invasion of virulent germs. BCG vaccine is designed to strengthen resistance and thereby protect against a disease that might otherwise be disabling or fatal.

Public health authorities consider it wise to confine BCG vaccination to groups—such as nurses, medical students, and hospital personnel—that are occupationally exposed to tuberculosis and to those who will be in direct contact with a person who has an open case of tuberculosis.

Vaccination is not undertaken for those affected by general weakness, minor infections, measles, whooping cough, eczema or furunculosis. BCG vaccination is not combined with vaccinations against other infectious diseases, as smallpox, diphtheria, typhoid fever or tetanus.

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BCG is a preventive measure, not a cure or a method of treating tuberculosis, and is used always as an adjunct to other methods of combatting the disease—finding cases, isolating and treating them, rehabilitating and returning them to normal lives. BCG can reduce the number of persons who will become tuberculous, but it can in no way assist in fighting the disease after it has been contracted.

At the present time it is not possible to say that BCG provides immunity over any number of years. Research will, doubtless, provide us with answers in the future.

BCG vaccination should be done only by those physicians who have observed the technique.

Birkhaug's method employs a spring-actuated 38-needle instrument that performs a multiple puncture vaccination with one downward action. A 4 x 4 cm. piece of sterilized thin paper or cellophane is moistened on both sides with BCG vaccine and placed on the ether-cleansed skin. The skin is held taut. The head plate is evenly pressed against the paper, and the trigger is pushed. The needle points become coated with the vaccine as they perforate the paper and enter the skin.

With Rosenthal's method, the physician draws the required quantity of vaccine into a syringe with a 19-gauge needle. The skin kept taught, three or four drops of vaccine are placed over the ether-cleansed area of arm or thigh and spread evenly with the side of the needle over a small area. Twenty to 40 pressure punctures in four or five rows about .5 cm. apart are then made, and the vaccine is rubbed gently over the punctured area with the side of the needle.

The intracutaneous method requires vaccine which contains 1.0 mgm. of bacilli per ml. instead of 20 mgm. as used in other methods. The outer surface of the left upper arm or thigh is cleansed with ether or alcohol, the skin is held taut and 0.1 c.c. vaccine is injected between the layers of the skin using a tuberculin syringe with a fine needle.

Carefully carried out, BCG vaccination causes no untoward reaction. BCG provides us with one more means of attack on an age-old disease enemy of mankind. In the war-devastated countries of Europe, the World Health Organization is pushing forward a mass vaccination, the results of which may prolong the productive lives of many persons who, without such protection, would fall victim to tuberculosis.

#### ANTIHISTAMINIC DRUGS DO COMMON COLD NO GOOD (Editorial in *New Eng. J. of Med.*, May 11th)

The use of antihistaminic drugs in the treatment and prevention of the common cold has received much publicity in the medical press and has been trumpeted throughout the nation in newspapers, magazines, radio advertising, and particularly in an article in the *Reader's Digest*.

The Council on Pharmacy and Chemistry of the A. M. A. made a critical analysis of the data upon which the claims rested.

A study by persons who have had extensive experience with acute respiratory diseases and are eminently qualified to undertake and evaluate data in this rather difficult field is reported in detail in this issue. The conclusion is that the antihistaminic drugs have no beneficial effect whatsoever on common colds.

WE HAVE NO SPECIFIC THERAPY FOR THE COLD as such and effort is directed mainly to promoting comfort and preventing complications. Should secondary infection develop, early recognition and prompt resort to specific treatment of the complicating infection may accomplish much—even to saving the patient's life.

—O. W. Bethea, New Orleans, in *N. O. Med. & Surg. J.*, May.

#### REMOVAL OF SPLINTER UNDER NAIL

When a splinter has been driven under a finger or toe nail, and broken off so that it cannot be reached with forceps, a very useful procedure, especially in children, is to (1) soften the nail by soaking in warm water, (2) pare down the nail with a sharp scalpel or razor blade and thus removing a piece of nail over the splinter and giving direct access to it. After removal protect the gap in the nail by applying collodion or small piece of adhesive tape. —*Medical World* (Eng.)

#### MYOCARDIAL INFARCTION VS. PULMONARY EMBOLUS

When myocardial infarction is suspected but cannot be proven definitely, suspect a pulmonary embolus. An embolus to the lung may cause pain suggesting coronary thrombosis. X-ray of the chest may show a wedge (pie) shaped lesion in the periphery of one of the lungs, or a hazy shadow or an elevation of the diaphragm on the affected side and small pleuritic effusion or no changes at all—infarction of the lung may not follow embolization. —J. W. Fischer, M.D., in *American practitioner*.

#### ARTIFICIAL EARDRUM AS AN EFFECTIVE HEARING AID (Arthur Kovacs, Milwaukee, in *Wisc. Med. J.*, May)

When, due to long-standing suppurative, a patient's hearing is so reduced that it is insufficient for undisturbed contact with his surroundings, an artificial eardrum may restore the audition to near normal level.

#### THE SEVEN STAGES OF MAN

First: Milk.

Second: Milk and vegetables.

Third: Milk, ice-cream sodas and candy.

Fourth: Steak, French fries, ham and eggs, cake, pie.

Fifth: Pate de foie gras, frog legs, lobster, caviar, hors d'oeuvres, crepe suzettes, scotch and champagne.

Sixth: Milk and crackers.

Seventh: Milk.

A friend of the judge dropped in to see him while court was in session. As the trial concluded the friend said, "You have a rough lot of customers this morning, don't you, judge?"

The judge answered, "you're looking at the wrong ones. Those are the lawyers."

Mr. June Wed: "What's wrong with this cake, dear?" It tastes gritty."

Mrs. June Wed: "Don't be silly, darling! The recipe calls for three whole eggs. Maybe I didn't get the shells beaten up fine enough."

Ethel—"Mama! It's dark in here and I'm afraid."

Mother—"Hush, Ethel. The angels are in there with you. Be quiet and go to sleep."

Pause.

Ethel—"Mama! One of the angels just bit me!"

The preacher wrote upon the signboard: "I pray for all."

The lawyer wrote beneath: "I plead for all."

The doctor added: "I prescribe for all."

The plain citizen wrote: "I pay for all."

"Did you give your wife the money you won?"

"Sure thing! And told her to buy some decent clothes—but she said, 'I've worn decent clothes all my life; now I'm going to dress like other women.'"

The old fashioned girl darned her husband's socks. Her daughter socks her darned husband.

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JAMES M. NORTINGTON, M.D., Editor

VOL. CXII

OCTOBER, 1950

No. 10

## Functional Disturbances of the Digestive Tract from the Point of View of the General Practitioner

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**L**ET ME CONFESS at once that I myself chose the title for this presentation. Perhaps it was a foolish selection, because the subject is far beyond my capacity. At the time, I was thinking only about the common clinical problems that you and I have to face and that none of us knows quite how to handle. I wanted to force myself to review my experience with functional disturbances of the digestive tract, for my own enlightenment as well as yours, and then I thought I would have the entire summer free to consider the subject. It didn't work out that way, and, if it had, I probably would still be just as confused as I was last February.

The general practitioner or internist sometimes excuses himself for a lack of interest in the functionally disturbed patient by saying that he belongs to the psychiatrist. Such a disposition of these patients is impracticable for various reasons: (1) a sufficient number of psychiatrists to care for them is not available; (2) most of the patients have associated organic disease, which the psychiatrist is not equipped to handle; and (3) the psychi-

atrist, as a specialist, is not already sufficiently familiar with the personal and family background of the average patient to handle his case expeditiously.

On the other hand, the family physician, to whom the patient comes initially, who already knows his heredity and social situation and who is qualified to recognize and manage associated organic disease, is often the ideal person also to evaluate the functional element in the case and promptly to inaugurate a helpful therapeutic program. I wish especially to emphasize the importance of his familiarity with organic disease, because in my experience most functional disturbance of the digestive tract develops on an organic basis. When I organized our gastro-intestinal clinic 20 years ago I took over from our general medical dispensary many patients whose cases had been diagnosed gastric neurosis. Most of these patients had been coming to the dispensary for years and were being carried along with tonics and sedatives. Thorough investigation revealed in many instances that their fundamental trouble was gall-bladder disease or peptic ulcer. Therapy on the basis of the organic lesion cured most of them, and never since then have we had in our clinic a large number of patients who required such symptomatic therapy or who remained as patients for such long periods of time.

From the Gastro-Intestinal Section (Kinsey-Thomas Foundation) of the Medical Clinic of the Hospital of the University of Pennsylvania.

A Feature of the Fourth Annual Medical Symposium of the New Hanover County Medical Society, held August 25th, 1950, at Wrightsville Beach, North Carolina.

It is true that some patients have disease of a primarily functional nature, and some of them must eventually go to the psychiatrist, but if the family physician is familiar with the vagaries of functional disease, has insight into the emotional reactions of patients, knows how to eliminate, as well as recognize, basic organic disease and has the complete confidence of his patients, he should be able to manage the great majority of the functional cases with digestive symptoms.

Now let us define what I mean by a functional disturbance of the digestive system. Broadly speaking it includes all abnormalities in the secretory, motor, sensory and absorptive functions that produce symptoms. This applies whether such dysfunctions be on the basis of organic disease or of some emotional aberration. Thus, when a patient complains of epigastric distress, eructations, regurgitations, nausea or vomiting, the immediate cause of his symptoms is a functional disturbance, most often involving the tonicity and motility of the stomach, whether the ultimate factor be gall-bladder disease, a peptic ulcer, a neoplasm or a psychoneurosis. We must first recognize the functional abnormality and then try to determine its causation.

Although I shall speak especially of the disturbances that have no recognizable organic basis, I wish first of all to indicate, by reference to a table constructed on the basis of my personal experience, the incidence of the ultimate causes of what, for lack of a better term, we may call indigestion.

Table I

Percentage Incidence of Proved Diagnoses in 7757 Patients Admitted to a Gastro-Intestinal Clinic with Chief Complaint of Indigestion

	<i>Per Cent</i>
Duodenal or gastric ulcer .....	19.6
Gallbladder affections .....	18.3
Other gastric or duodenal affections.....	12.6
Esophageal or intestinal affections.....	4.0
Extraabdominal affections .....	18.9
Functional disturbances .....	26.6
	100.0

All of the patients covered in Table I had a functional digestive disturbance—most often motor, sometimes secretory or sensory—to account for their anorexia, epigastric discomfort, eructations, nausea, vomiting, constipation or diarrhea. In most instances esophageal retention, gastric hyper- or hypo-motility, cardiac or pyloric spasm, abnormality in the intestinal pattern or spasticity of the colon could be demonstrated by radiological examination; disturbed secretion of the stomach, by gastric analysis; other dysfunctions, by physical examination or appropriate study of the bowel excretion. Often the disturbance in function was the same whether eventually proved to be due to organic disease, within or outside the digestive

tract, or to an emotional upset. Thus the establishment of a functional aberration, even by objective procedures, does not constitute a diagnosis. Such a demonstration serves only to indicate further study of the case. In the pursuit of that investigation, our table of the incidence of the ultimate causes may be helpful.

It is important to point out, however, that our data were accumulated in a highly specialized clinic, devoted primarily to the study of organic disease of the digestive tract. Most of the patients were referred by physicians who sent elsewhere those with obvious blood, cardiac, pulmonary, renal and purely functional disease. Thus our table indicates a somewhat greater incidence of organic digestive system disease than occurs in general practice. I suspect, however, that the figures are more nearly correct, even for private practice, than is generally recognized. There is still too much of a tendency to diagnose digestive disorders as purely functional.

The fact, therefore, that some dysfunction of the gastrointestinal tract, sufficient to account for the patient's symptoms, can be demonstrated, should serve only as an incentive to further study. The ultimate diagnosis may be some organic disease of the digestive tract, such as a peptic ulcer or a carcinoma of the stomach or colon; of some other abdominal organ, such as the gall-bladder, pancreas or kidney; of some extraabdominal organ, such as the lungs, heart or endocrine glands; it may be an infectious process; or indeed it may be a purely psychic disturbance.

The problem presented by the patient with indigestion consequently demands extensive investigation, often more than the narrowly trained gastroenterologist can provide. Such a specialist may be able to demonstrate an ulcer of the duodenum, a cancer of the stomach, gall-bladder disease or an ulcerative colitis, quite sufficient to account for the dysfunctions that have developed; and yet the patient may have, in addition, a pulmonary, cardiovascular, renal, endocrinological or emotional disturbance that is far more important. Therapy directed toward the diagnosed digestive-tract lesion may fail completely because of a lack of appreciation of, and attention to, the extra-gastrointestinal situation. Thus an effective gastroenterologist must be more than a specialist in his particular field. He must have had an experience in the general domain of medicine, including an understanding of the significance of emotional problems. In other words, he must be steeped in the fundamentals of general medicine. Many general practitioners so qualify.

Let us assume, therefore, that the patient with a dysfunction of the stomach or bowel has been adequately studied, that no organic disease of the digestive tract or of the other systems of the body



has been found to account for his symptoms. Is the patient to be told that he has no disease, that his symptoms are on a nervous basis and that nothing can be done about it?

If that is the policy of the attending physician, he is missing a great opportunity to be of service to his community. Furthermore, he is losing a good part of his practice in the field of gastroenterology. He is failing to help, and often alienating from the profession, a group of patients that urgently needs medical support. Not infrequently he is making permanent invalids of patients who, if given proper advice and supervision in the beginning of their illness, can be permanently cured. The recognition of a carcinoma of the stomach is highly important, but eventually 90 per cent of such patients will die of their disease, as will many of those with cardiac, renal and pulmonary disease. Even those with a peptic ulcer may be relieved of symptoms only to return six months or a year later with a recurrence. On the other hand, proper early management of the patient with a purely functional disease may prevent life-long illness, even eventual organic disease.

Some may still question the occurrence of dysfunctions of the digestive tract on a purely psychic basis and the possibility of such disturbances ultimately producing organic disease. For them let me now refer briefly to some recent work that puts this matter on an objective basis.

Wolf and Almy have reported on the comparative motility of the esophagus in relation to periods of personal stress and of relaxation. The time required for the passage of a barium meal was carefully determined in subjects while they were in a relaxed state; then they were purposely disturbed by a discussion of personal domestic problems (in one instance, a problem of conflict of a father in relation to his children; in another, an unhappy marital situation). Under such circumstances the transit time through the esophagus in one patient increased from 30 seconds to 15 minutes. Also, during the period of emotional strain there was a marked increase in the contractions of the esophagus, which indicated that the delay in motility was due to cardiospasm. These investigators also reported the case of a woman with a sensation of food sticking in the chest, regurgitations and a dilated hyperactive esophagus. The esophagus came back to a normal diameter and the swallowing time was reduced to 12 seconds after the resolution of certain emotional conflicts in her family.

Cannon found many years ago that gastric hypofunction developed when the individual was subjected to terrifying conditions. This we now know, however, varies with the individual, some under similar circumstances developing hypersecretion and hypermotility. Wolf found in his subject Tom,

who had a gastric fistula, that under sustained anxiety the mucous membrane of the stomach became red and swollen, more fragile and more subject to painful stimuli. Under other types of emotional strain, hypofunction and pallor were observed. Mirsky found an increase in pepsinogen of the blood and urine during emotional stress. Experimentally alterations in gastric function have been produced by stimulation of certain cortical areas.

Similarly studies of the colon have showed changes in contractility and vascularity under varying conditions of the emotions. Almy and his coworkers, in a recent paper, have reported on the effects of the emotions on the motor function of the sigmoid, observed kymographically. In most instances, under conditions of stress, they found hypertonicity and an increase in the frequency and amplitude of contractions. In others they found a reduction in motility. The latter effect was observed even in patients with an irritable colon and was usually associated with a sense of inadequacy and self-reproach. They believe that alternating constipation and diarrhea may depend on alternating psychic moods.

Dysfunctions of the colon, if long continued, not infrequently lead to the development of ulcerative colitis. This is well appreciated by all clinicians of wide experience. Some believe that there is a special personality pattern that predisposes to ulcerative colitis. In my experience every patient with non-specific ulcerative colitis has a deep-seated emotional problem of some sort.

Since, then, such disturbances in the functions of the digestive tract can occur on a purely emotional basis, just as they do in connection with organic disease, and since it is functional disorders that produce symptoms, we must not expect to find organic disease in all patients with indigestion.

Having dismissed organic disease from consideration as the cause of the symptoms, the next objective is to evaluate the emotional status of the patient, to discover the nature of his psychic disorder. The physician may already know the general background of his patient, but, even so, it is highly important to discuss with him his immediate problem. By so doing the physician learns more precisely the patient's attitude and reaction to his immediate life situation and at the same time establishes a helpful personal relationship.

#### MANAGEMENT

The first essential in the management of the emotionally disturbed patient is to be sure of the diagnosis. This, as already stated, may require extensive study. The investigation itself may effect a cure, because in many instances the patient needs only assurance that he has no organic disease. This, obviously, is the explanation for many of the excellent therapeutic results that follow the adminis-

tration of drugs, and for which the pharmaceutical agents themselves are given credit. Often, however, the ultimate benefit to the patient is greater if drugs are withheld, because he then has a better understanding of the etiology of his affection.

In this connection it is important in most instances that, once organic disease is excluded, the physician take a very positive attitude regarding the functional nature of the disturbance. Any uncertainty on his part, sometimes as indicated even by the administration of drugs, will raise a doubt in the patient's mind as to the situation. When drugs or other measures are prescribed it should be clearly stated that they are for associated conditions or for their help in the control of the primary functional disturbance. Otherwise the patient may suspect that some other and more serious disease is being treated. Such an attitude of the physician does not mean that he regards the patient's illness as of no importance. These patients are just as sick as those with organic disease and they deserve equally conscientious and patient supervision.

In order to gain the cooperation of the patient, and secure its maintenance, it is also essential that he be brought to an understanding of the way in which his neurosis has developed. That is, the situation should be rationalized for him. This may be very easy to accomplish or it may be impossible. We today are concerned only about the simpler cases, the ones that we ourselves, as general practitioners, should be able to manage.

A recent patient of mine was admitted to the hospital because of difficulty in swallowing and a lump in the lower sternal area. This had been present for two months. More recently nausea and vomiting had developed. She had lost weight. A barium-filled capsule stuck in the upper esophagus, but finally passed. Other studies were negative. We learned eventually that her husband had been drinking excessively and at the time of the onset of her symptoms had disappeared from home. She was greatly embarrassed, had avoided discussing the matter, even with her physician. After inducing her to discuss the matter freely and after explaining that under such circumstances certain involuntary nerves could be so affected as to produce spasm of the esophageal muscles, all her symptoms disappeared. I need not cite other such cases of anxiety neurosis, relieved by an explanation of their mode of origin or by solution of the problem. All of us are familiar with them.

In some instances, when the causative factor cannot be removed or the patient is unable to face his problem in philosophic fashion, relief is obtained by measures designed to direct the patient's attention along other lines. The assumption of increased or different responsibilities and activities may serve to sublimate the neurosis. In other in-

stances, but less frequently I think, rest is indicated—less tension in work and play, shorter hours of work, longer or more frequent vacations, less social activity. Hobbies may play an important part. Mental conflicts, however, are better faced and solved than run away from.

Under all conditions drugs must be employed with great caution. Narcotics should be avoided. Mild sedatives such as the barbiturates often are of great help. The patient's nutrition, of course, should be well maintained. This indicates especially the need for calories and proteins.

The treatment of these cases necessarily varies considerably with the suggestibility of the patient himself and the personality of his physician. Often success of treatment depends more largely on the art than on the science of medicine.

#### 30,000 U. S. GIRLS AND WOMEN DIE IN ACCIDENTS EACH YEAR

Cardiovascular-renal diseases and cancer are the only two causes of more deaths (Metropolitan Life Insurance Company). During the childhood and adolescence, accidents are the *greatest* single threat to life for females.

Falls account for 45 per cent of the total number of these deaths—the many falls among women at ages 65 and over.

Impaired vision and hearing, weakened muscles and other changes make the aged prone to falls. Accidents which ordinarily cause little disability to younger persons often result seriously for the elderly.

Among girls of 15 to 19, motor vehicle accidents account for two-thirds of the mortality from all accidents; of 20 to 44, more than half.

Burns and scalds, the statisticians point out, also claim the lives of many women and girls each year. Among preschool girls such accidents frequently are caused by upsetting or falling into hot liquids, and at the school ages they often are the result of playing with matches or clothing catching fire from an open flame. Beyond childhood the mortality from burns and scalds reflects the special hazards to which housewives are exposed while working around kitchen or in the laundry.

#### SIMPLE METHODS OF TREATING INJURIES OF THE FINGERS (S. A. Jenkins, in *British Med. J.*, July 29th)

The index, middle, and ring fingers have their joints sufficiently near the same transverse axes for there to be no restriction of normal movement when they are strapped together, especially if an elastic adhesive strapping is used and applied with only slight tension. The fifth finger is shorter than the others, and when strapped to the ring-finger the normal movements are restricted, but there is still a sufficient range to prevent any permanent stiffness.

Two strips of elastic adhesive 1 in. wide are applied around the two fingers with the joints fully extended; the interphalangeal joints are left uncovered as much as possible. The elasticity of the strapping allows the fingers to be fully flexed though the interphalangeal joints are not directly opposite each other.

This method has been extensively used for all types of sprains and reduced dislocations of the fingers, and has more recently been found equally effective in treating stable fractures of the phalanges and metacarpals. A chronic sprain with intractable pain can be manipulated after injecting the affected ligament with 1% procaine, and then splinted as for a recent sprain.

## Psychotherapeutic Management of Essential Hypertension

SYLVAN A. STEINER, M.D., Washington, D. C.

WE HAVE BEEN cognizant for many years of exaggerated emotional reactions in the patient with essential hypertension. Abundant observations support this psychogenic element as a contributory factor in the genesis of arterial hypertension. We are aware that simple reassurance lowers blood pressure. We are becoming more conscious of Lipkin's<sup>1</sup> observation that allowing patients to work off hostility, verbally, lowers blood pressure. The lie-detector test clearly shows the relation of emotional turmoil to pressor response.

Since the monumental works of Goldblatt,<sup>2</sup> it has been demonstrated by Homer Smith<sup>3</sup> and Wolf<sup>4</sup> that feelings of anxiety or resentment produce a rise in blood pressure and a decrease in renal clearance tests. Here the renal artery is constricted by emotion instead of the Goldblatt clamp. Workers such as Weiss<sup>5</sup> and Alexander<sup>6</sup> have observed a lowering of blood pressure after these patients adopted more aggressive attitudes.

The physiological mechanism of headache in migraine is identical to that in essential hypertension. The extracranial arteries are dilated in both types. Intravenous injections of ergotamine relieve these headaches.<sup>7</sup> I have observed patients with headache at low pressure, and no headache at 200 mm. Hg. pressure.

In spite of these revealing data, our treatment of essential hypertension remains largely somatic and empiric. Our emotional premise is now established on such a valid basis that it is possible to formulate a psychotherapeutic approach to this disorder. We are confronted with the fact that we must treat not only the disease the patient has but also the person who has the disease.

Take the case of Mrs. B———. At the age of 56 years, one month after the death of her son, she was found to have high blood pressure. Shortly thereafter she remarried. Her husband aroused great hostility in her. He was stingy and forced her to live almost entirely on her small pension. His lack of cleanliness, his bad table manners and teasing irritated her. She stated: "He eats like a pig, and this disgusts me. I walk away from him and go to bed."

In the office she released her anger by complaining in great detail about her husband. Her blood pressure was nearly always lowered by sympathetic listening and friendly advice. I have advised her that when she is able to regard his conduct as unimportant and accept it with a sense of humor, it will no longer affect her unpleasantly and injuri-

ously. Recently she has been planning an extended trip to get away from her husband. She is anticipating a long visit with a daughter-in-law of whom she is very fond. Her blood pressure has dropped from previous levels of over 200 to 140.

This patient does not want merely a prescription and reassurance about her blood pressure level. She wants and needs treatment as an emotionally disturbed individual, not as a person with an organic disease state. She needs moral support and a channel for the release of bottled-up animosity.

Mrs. J——— is another patient who shows the typical personality pattern of suppression of resentment. Her mother is an extreme hypochondriac, and uses various neurotic ailments to bind her husband closer to her. The father believes his wife is a seriously ill woman, and makes many personal sacrifices to placate her. The patient sees through her mother's artifices and resents her taking advantage of her father. She loves her father but is annoyed by his lack of self-assertiveness with the mother. This conflict causes Mrs. J——— great anxiety, since she must suppress her anger. She becomes afraid that her pressure is up, afraid of a stroke. Simple attentive listening to her stories about the family enables her to release hostility. When her peace of mind is restored, her blood pressure drops. During one visit I pointed out that she must not let anybody arouse her anger. She said: "I am trying to do that. My husband used to anger me. He refuses to repair our leaky roof. Now I tell him, 'when the roof falls in you will be sorry you didn't fix it.'" At this point her blood pressure went up 50 mm. Here is another element of her life to which she is hostile. Until recently there was another situation in her life that induced conflict and feelings of futility. The patient wanted to buy a car so that she would not have to depend upon her father for transportation. The parents were opposed to this and tried to discourage her. At my insistence she did buy a car. Since doing this she has been happier and her blood pressure has remained nearly normal.

These cases demonstrate the need of these patients for psychotherapy in addition to somatic medication. This need we are obligated to fulfill. We must help them attain a philosophy of life which will bring them peace of mind.

We know from the work of Cannon<sup>8</sup> that blood pressure goes up in normal people in response to any situation provoking fear or rage. This primitive reaction is biologically useful. With a decrease



in blood flow to the kidneys and intestines, more blood goes to the muscles to prepare them for use in fight or flight. This is the normal reaction of the body to any emergency.

Why is this emergency reaction always present in patients with high blood pressure? What are the psychosomatic factors which keep the kidney artery constricted and the blood pressure up? Why is it that many of these patients can neither be aggressive nor accept a dependent relationship without emotional conflicts? Why do they develop this pattern of reaction to life? These questions the physician should consider in every case of hypertension in which there is evidence of emotional disturbance.

A case analyzed by Dr. Carl Binger<sup>9</sup> clearly illustrates how this personality is evolved. The patient lost her mother when she was four years old. She was reared by her father and grandmother. Both were harsh and forbidding, and the child received much discipline but little affection. To this strict discipline and deprivation of affection she reacted with extreme timidity and rigid obedience. She was not allowed social liberty, nor was she permitted to associate with the opposite sex. Naturally she grew up to be very retiring and shy. She avoided boys, and in later years was nervous in the presence of men. As a young woman she was very docile, full of fear, and had a strong unsatisfied need for affection. At the age of 22 she married in spite of her father's warnings. Her husband was given to outbursts of rage and sometimes he beat her. Nevertheless she stayed with him and submitted to his harsh treatment and abuse, although she was filled with resentment.

She said: "I think my high blood pressure started on the day I was married. I had hoped to find a quiet, peaceful person with whom I could live in contentment but I found just the opposite." The grievances she harbored against her husband were intense, but her fear of showing her hatred was even greater. She was only able to express her hate by quarreling incessantly over money matters.

When she was 29, the emotional strain under which she lived reached a climax and it was at this time that her high blood pressure was discovered. The crisis was brought about by the death of two persons very close to her. This loss, plus her husband's cruelty and another pregnancy, overcame her lifelong habit of suppressing hostile feelings. She developed a feeling of bitter hatred toward her husband and wished he were dead. These feelings aroused so much guilt that she became very depressed and suicidal. She began to complain of blurring of vision, headaches and shortness of breath. Five years later she died.

Another case, analyzed by Dr. Lewis B. Hill of Baltimore, shows how in early childhood these suf-

ferers develop a strong need to suppress hostility. A man of 32 had had high blood pressure for 14 years. At the age of 18 his b. p. was 180/120, and it averaged 170 over a period of 14 years.

The patient consulted Dr. Hill not because of his high blood pressure but because he had developed acute nervous tension. Dr. Hill comments on a treatment session: "During one session the patient dramatized a scene which he dated as occurring at his eighth year. He appeared to lose consciousness and then built up a rage reaction at the height of which he grasped a weighted ash tray and made a convincing attack upon my head with it. He actually avoided hitting me. His verbal offerings at the time were addressed to his mother and included mention of a 'G . . . d . . . . buggy whip.' As his rage increased, he grew red in the face. For a brief time thereafter he completely forgot the episode. He then brought up the following memory: As a child he had been teased by his sister until he struck her. His mother, as a punishment, took a pony whip with the evident intention of striking him. In his fear he seized the whip and ran away but was brought to bay as he stood upon a bed intending to hit her with it. He lost courage and, as a final act of surrender, with the hope of avoiding a whipping, he handed it to her. She struck him angrily. He had forgotten the experience until now. For three years since this analytic experience his blood pressure has never been over 135/90. No other treatment was given in these three years of observation.

These cases reveal the childhood basis of abnormal adult reactions. It is necessary for a child to do as the parent wishes in order to secure parental love and approval. Rebellion or aggression may be met with withdrawal of love, and anxiety in the child ensues. There is no choice for the child but to submit, since he can not run away and feels secure only in parental affection. When this interaction is repeated over and over, the child finally becomes very submissive. He cannot easily tolerate this state, however, because he feels defeated. At the same time his hostility is aroused toward himself for having submitted.

This child will become an adult showing considerable external friendliness, submissive traits, and strong self-control. He is fearful of displeasing others in proportion to his need for strong dependent relationships. Yet he cannot accept this state of affairs, since he must suppress aggressive and competitive impulses to bring it about. As a result, he feels inferior and again hostility is aroused.

Many neurotic persons have this type of conflict, but unlike hypertensive patients they have symptoms of a neurosis. The patient with high blood pressure rarely develops such symptoms. When he does, his blood pressure drops. Any sit-



uation which threatens loss of affection and dependency, such as the death of a loved one, usually is the starting point of elevation of the blood pressure. This fact is substantiated in the case of Mrs. B—— and the case cited by Dr. Binger.

From these cases it is evident that our somatic approach to the problem of essential hypertension is inadequate. We must get beyond our own fixation on the baumanometer to the human being. We must measure the patient's improvement not in mm. of Hg. but in the degree of relief from feelings of guilt, anxiety and frustration. To accomplish this we must take the following steps:

1. *Develop empathy for these patients:* An excellent start will be to change our attitudes toward neurotics in general. Neurotics are, for the most part, human beings trying to adjust at the age level of an adult with the emotional equipment of a child. To be able to sense what these patients feel and suffer is empathy. To be able to appreciate neurotic guilt and anxiety, imagine the effect upon you if your own normal reaction to a fatal mistake in diagnosis persisted unabated for months. Envision your own normal hostility to a person persisting for a long time and you will know how a neurotic can be tormented. Through the study of books such as Karen Horney's "Self-Analysis," "Are You Considering Psychoanalysis?," Franz Alexander's recent "Psychosomatic Medicine" and others, you will acquire a map to guide you in the land of psychosomatic medicine. The more you put into practice what you glean from books, the better you will be able to understand neurotic, emotionally-ill people. When you accomplish this you will be ready to take the second step in the psychotherapeutic approach.

2. *Achieve positive transference:* This simply means that you induce the patient to like you by instilling in him the feeling that you understand and like him. This makes him feel confident that you will be able to solve any personal problem for him. The patient is thus enabled to open up his psychic processes for you to explore. Transference also enhances the effect of any medicine you prescribe. It conceivably makes a Smithwick operation appear as a blessing to the patient.

3. *Insight gaining:* This is a process of bringing the long-suppressed hostility against parents or parent surrogates to consciousness. It is initiated by having the patient uncover early childhood memories. With these memories the originally attached emotions will come to the surface. Then, in the light of present intellectual maturity, the patient will be able to see that these original feelings still persist, and that they harmfully influence adult emotional reactions. The patient will be able to perceive that he reacts to all adults as he originally did to his parents. With this understanding,

he can begin to change his attitudes toward life.

In older patients and patients with organic damage, it is wise not to go beyond giving moral support, reassurance and benevolent advice. Bringing long-repressed hostility to conscious thought creates an emotional storm until the patient is able to understand it. During this period, at which extreme anxiety has to be dealt with, organic damage may be accelerated.

4. As the patient gains insight, it is well to present to him the goals of change in attitude which are desirable. These are:

- a. *Passive aggression:* This implies that both expression and repression of anger is harmful. Anger implies fear of being defeated or dominated. In childhood the patient had to submit because there was no other choice, but as an adult no one can dominate him unless he allows it. Once this is understood, the need for hostility will be lessened.

- b. *Realization that security lies within.* Our feelings of security in childhood are dependent on parental love. As an adult, we feel secure in proportion to the degree of our self-esteem. As Joshua Liebman said: "Love thyself properly." To do this one must accept himself as a human being with all the inherent human imperfections. An individual must be prepared to forgive in himself the failures, dishonesties, moments of hatred, of weakness and submission, even of immorality, that are common to all mankind. Only in this way can we gain self-esteem and continue our effort for self-improvement.

5. *Use the service of the psychoanalyst:* As you call in a surgeon to explore an undiagnosed abdominal condition, so should you consult with the analyst to spot areas of the disordered mind which need exploring. The majority of these cases can be handled by the medical man with suggestions for management from the analyst. At the present there is hostility to suggesting an analyst, and often the patient is lost. Yet we must persist if society is ever to accept a therapy which we know to be beneficial.

6. *Suggest outlets for energy utilizations:* The ultimate objective of therapy is redirection of the energy used up in anxiety and hostility into healthy channels of work and play. Extracurricular work interests, hobbies and sports must be built up as important adjuncts during therapy. The patient must be given to understand that maintaining these adjuncts to therapy constitutes invaluable prophylaxis against future relapse.

7. *Misconceptions about high blood pressure:* There are certain popular but completely erroneous fears about high blood pressure. These misconceptions should be corrected early in therapy. One such fear is that headache may be a warning of impending stroke. Another is that the higher the

blood pressure, the greater the danger of complications. Perera<sup>11</sup> has shown that pathology may become manifest rapidly with pressures under 200 and very slowly at those under 200. The fear that a stroke may occur when the pressure is high is unwarranted. Actually strokes commonly occur during sleep when the pressure is at its minimum.

8. *Prevent baumanometerphobia*: To do this wean the patient away from his knowledge of the blood pressure reading. Correcting some of his erroneous ideas about the significance of blood pressure level may suffice to do this. Many physicians have already adopted this policy. Allowing a patient to watch his tension as he would a ticker tape is obviously bad. Reassurance that you will give warning should levels be reached which portend danger, is also helpful.

9. *Curbing of activities*: Be sure that real somatic benefit will result from restricting activity. Overemphasis on the need for reducing activity will increase the feeling of insecurity, since it implies danger in the present program. It is far better, somatic conditions permitting, to encourage more aggressive action.

10. *Practice preventive medicine*: The attitudes of the patient's parents toward him will be duplicated in the patient's attitude toward his children. This can go on generation after generation unless the vicious cycle is broken. Teach that children must never be expected to be angels nor allowed to be complete devils. Children's greatest needs are affection, approval, kindly interest and gentle but firm discipline. Teach that verbal hostility in children is within normal limits and must be handled tactfully. If this is done we will have fewer neurotic personalities in our society and perhaps fewer patients with essential hypertension.

A small number of persons with essential hypertension have had psychotherapy. We are gaining a deeper understanding of the emotional distortions of perception from which these patients suffer. We have begun, barely begun, to deal with the psyche as well as with the soma.

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#### EPIDEMIC MYALGIA

(J. H. S. Hopkins, in *British Med. J.*, May 27th)

Bornholm disease, "epidemic myalgia," or "epidemic pleurodynia," has been recognized as a commonly occurring disease in the Scandinavian countries for 20 years. It probably occurs equally often in this country, but has been curiously neglected, though at an earlier stage outbreaks of what was described as epidemic pleurisy were recorded as having attacked nurses and patients in two children's hospitals in London (1924). It is not included in the teaching of many hospital medical schools, and it figures briefly, if at all, in textbooks.

It is recognized when it occurs in epidemics, but the single sporadic case, and the first one or two in an epidemic, are usually not diagnosed. The milder cases are often referred to as fibrositis, strained muscle, indigestion, or pleurodynia; the severer ones as pleurisy, atypical pneumonia, coronary thrombosis, mesenteric adenitis, appendicitis, or poliomyelitis.

Several cases of Bornholm disease are described. It is suggested that the disease occurs commonly in this country [Britain], but is often unrecognized.

#### THE ROLE OF POTASSIUM IN CLINICAL DISTURBANCES OF BODY WATER AND ELECTROLYTE

(D. C. Darrow, New Haven, in *New Eng. J. of Med.*, June 29th)

Loss of potassium is likely to occur when the intake is low, during parenteral administration of fluids containing no K, in diarrhea of various types, during post-operative gastric suction, after injection of desoxycorticosterone acetate, Cortisone and ACTH, in some conditions of increased adrenocortical activity and perhaps starvation.

The chloride is usually the choice of the potassium salts because it is readily sterilized and may be given intravenously or subcutaneously as well as by mouth. Oral administration, if possible, is the route of choice. The normal adult ingests 4 gm. (8gm. KCl) per day; this amount can be given in two to four doses in 24 hours. The salt may be added to beverages or to food. Babies or children should be given corresponding amounts on basis of the relative caloric production rather than the weight. Concentrated meat broth is an old-fashioned remedy, which has the advantage of containing large amounts of K together with other ions and cellular constituents.

The addition of K to various fluids given parenterally is rapidly coming into general use. This practice has little hazard and is life-saving in some cases. K is indicated not only to replace deficits but also to prevent deficits from developing.

Change in body water and electrolyte usually involve disturbances in body K as well as Na, Cl and H<sub>2</sub>O. Acidosis may be explained by relative deficit of K if renal adjustment is achieved. Deficit of K induced alkalosis if renal adjustment is achieved.

#### INVERSION OF THE UTERUS—REPORT OF CASE

(C. F. Johnston, Jr., Abingdon, in *Pa. Med. Monthly*, June)

Inversion of the uterus is rare, seen only once or twice in the lifetime of an obstetrician of average practice. It is best treated by early replacement of the uterus either by abdominal or vaginal method after shock and hemorrhage have been controlled.

## Postoperative Cholangiography

DONALD B. KOONCE, M.D., Wilmington, North Carolina

**C**HOLANGIOGRAPHY, or the x-ray study of the extrahepatic bile passages, of necessity, limits itself to the operative and postoperative phases. Preoperative cholangiography up until the present time has not been accomplished. Occasionally a stone may be visualized in preoperative films in the common or hepatic ducts, but only rarely are the ducts themselves visualized in the preoperative study of the gallbladder and its functions. The occasional showing of the common duct in cholecystography has been incidental.

The main indication which has incited the development of cholangiography has been stones remaining in the common duct after cholecystectomy. Lahey stated in 1936 that previous to 1926 stones were left in the common duct in one out of ten patients subjected to cholecystectomy; in 1938, that exploration of the common duct in the Lahey clinic had risen from 15 per cent to 50 per cent since 1910, and the incidence of the finding of stones in the common duct had increased from 8.4 per cent to 18 per cent. These statistics reveal a situation which demands energetic following up of any clues to the development of means by which the operating surgeon can be sure that he had left no stones in the common duct. Even in cases in which adequate probing of the common duct has been done, stones have been left. Cholangiography is a much more reliable method of learning whether or not any such stones remain.

There are two phases of cholangiography, postoperative or delayed and operative or immediate. Postoperative cholangiography has been done for some time for the purpose of insuring that no stones were left after cholecystectomy and that the common and hepatic ducts were open. It is quite an easy procedure, gives only slight pain, and adds to the cost nothing but that of the extra x-ray. It is a simple introduction through the T-tube of 10 to 15 c.c. of whatever opaque solution is used by the x-ray department. The big disadvantage of postoperative cholangiography is that if residual pathology is found, a second operation is necessitated.

Mirizzi, in 1931, and Hicken and Best, in 1936, reported a series of operative or immediate or direct cholangiographies, and advised the routine use of this procedure in all gallbladder operations. This, however, has not been very generally accepted because of the clumsy technique, the poor films

which result, with consequent high percentage of errors in interpretation of those films. There are, however, many advantages in doing cholangiographies in the operative stage. First of all, photographic demonstration of the biliary system would obviate the opening of the common duct in many cases. Second, the necessity of a cholecystoduodenostomy can be determined early in an operation. Third, stones and other obstructions in the hepatic and common duct are easily demonstrated at the time of operation, and the chance of a second operation being required thus reduced to practically nil. Fourth, morbid anatomy, which may be of postoperative as well as operative importance, is easily demonstrated. Fifth, the rather drastic probing of the common duct, which is often necessary and which sometimes results in an abscess around the common duct and possible pancreatitis, may be dispensed with.

Several methods have been used and advocated by different men for the injection of the opaque substance in operative cholangiography. One method is the aspiration of the gallbladder by means of a large needle or a trocar, this followed by injection of the opaque material directly into the gallbladder, and thus on into the bile ducts. Another: after the cystic duct has been isolated and severed, a large needle or trocar is passed into the cystic duct and the bile ducts injected in this manner. A third: the introduction of a needle or a trocar directly into the common duct and the injection of the opaque material. A fourth: the injection of the biliary duct system immediately through the T-tube after the common duct has been opened and the T-tube placed in.

There are quite a few variations in the descriptions of the minute details of the procedures for direct cholangiography, almost everyone having his own special refinements of technique. However, there are certain difficulties which none of these techniques seem to overcome. First of all it is difficult to get the patient to hold his breath while the picture is being taken, unless under spinal anesthesia, or unless the anesthetist is able to suspend respiration temporarily by the use of intratracheal anesthesia. Part of this difficulty has been obviated by the increase in numbers of trained anesthetists, and the increasing use of intratracheal anesthesia for gallbladder procedures.

The x-ray pictures must be taken with a portable machine and usually very poor films, difficult to interpret adequately, result. Frequently leakage

Presented to the Tri-State Medical Association of the Carolinas and Virginia's Fifty-first Annual Meeting, held at Fayetteville, N. C., February 20th-21st, 1950.



around the site of injection of the opaque material occurs, with some resulting peritoneal irritation. One of the biggest difficulties, which so far I have been unable to find any way around, is the inability to use the gallbladder bar. Many gallbladder cases are extremely difficult to do without the added exposure given by dorsal flexion. Using the gallbladder bar and then lowering it for the purpose of inserting the cassette underneath the patient is difficult and cumbersome.

All in all, operative cholangiography is not yet a very practical procedure. My experience with this procedure, which includes attempts to use all the various techniques which I have been able to find described in the literature, does not leave me willing to accept it as a routine method of diagnosis. It is extremely advantageous in a number of cases, and in the midst of an operation in which the common duct is opened its use will in some cases obviate the need for a second operation.

As to postoperative or delayed cholangiography, I have convinced myself that it is an invaluable adjunct to the treatment of biliary disease, and should be done in all cases in which a T-tube has been inserted. First of all, it assures that there are no stones in the common or hepatic ducts at the time of the patient leaving the hospital. Second, it gives us a knowledge of biliary anatomy in the individual cases, which at times is of importance. Third, it frequently enables us to determine just how long the T-tube should stay in the common duct. Fourth, there is no likelihood of any harm resulting from the procedure.

The following are a few cases with accompanying x-ray slides, which demonstrate some of the factors in cholangiography:



Figure 1

CASE No. 1: Matron, ———. At operation the gallbladder was found gangrenous, the common duct stenosed,

which necessitated opening the duodenum in order to get a probe of any size through the ampulla of Vater. Postoperatively the patient suffered much pain, simulating gallbladder attacks, which persisted for ten days. The accompanying slide (Figure 1), which is a postoperative cholangiogram, demonstrates a failure of the injected dye to pass through the distal end of the common duct into the duodenum. It also shows that this patient should have had a long-armed T-tube inserted at the time of the operation, with the long arm going through into the duodenum. This patient eventually recovered without any further complications.



Figure 2

CASE No. 2: Matron, ———, disabled by a recurrent gallbladder of Beye. Postoperative cholangiogram shown in slide (Figure 2) reveals a markedly dilated common duct. However, the dye goes through into the duodenum well.



Figure 3

CASE No. 3: Matron, ———, whose gallbladder had been removed several years previously, and whose common duct had become very markedly stenosed. An operative cholangiogram was done, as well, shown in (Figure 3) by the means of injecting the opaque substance through a T-tube after it was placed in the bladder. This cholangiogram shows poor filling of the distal end of the common duct. The T-tube was removed, the common duct explored through the duodenum, and a long-armed T-tube placed through into the duodenum, as demonstrated in the postoperative cholangiogram (Figure 4).





Figure 4

CASE NO. 4: Man, ———, with a gangrenous, stone-filled gallbladder, and stones in the common duct. The gallbladder was removed and the common duct drained with a T-tube. Postoperatively there was poor drainage from the T-tube, and most of the bile drained around the cigarette drain. This was our first use of postoperative cholangiography. As is shown in Figure 5, the postoperative cholangiogram revealed an obstruction of the common duct below the lower arm of the T-tube, and the upper arm of the T-tube was entirely too high up in the hepatic duct.



Figure 5

CASE NO. 5: Colored man, ———, whose preoperative x-ray picture showed no function of the gallbladder. As shown in slide (Figure 6), (a preoperative x-ray), there was a stone above the region of the gallbladder, its location not exactly definable. At operation, after rather extensive dissection, this stone was finally found to be outside the bile ducts. Postoperative cholangiogram, slide (Figure 7) shows the stone to be well out of the biliary system. In this case operative cholangiogram would have saved the patient considerable unnecessary dissection and shortened his stay on the operating table.

CASE NO. 6: Matron, ———, 12 months before had a cholecystectomy for stones, at which time the common duct was explored and drained with a T-tube. She returned with symptoms obviously caused by a stone lodged in the common duct. At operation the common duct was again explored, but no stone could be felt with the probe.

An operative cholangiogram was done by temporarily placing a T-tube in the common duct filling it with opaque

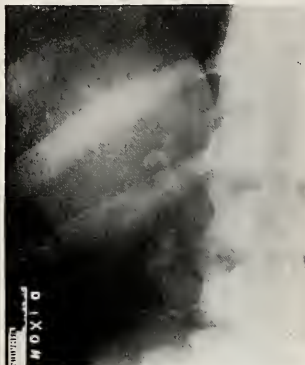


Figure 6



Figure 7



Figure 8

material. This immediately (Figure 8) revealed a stone well down in the common duct, which was then, with great difficulty, removed. A postoperative cholangiogram (Figure 9) revealed the common duct well open with a long arm T-tube in place.



Figure 9

#### Discussion

DR. HENRY E. PLENGE, Spartanburg:

Several opaque media have been used in performance of cholangiography, including lipiodol, thorast, hippuran, iodochlorol, and diodrast. Some operators object to the iodized oils since, as they are not miscible with the aqueous contents of the biliary tract, small globules of aqueous material may become surrounded by the oil and simulate gallstones. On the other hand, my experience with the aqueous opaque media has shown that a fairly large number of patients develop pain during the procedure, apparently due to spasm of the biliary ducts. For this reason I have used iodized oil nearly entirely for postoperative cholangiography and have found that, if this medium is injected constantly, without hesitation or interruption, confusing results can be avoided. It has recently occurred to me that ray-o-paque, a thick, water-miscible contrast substance, which is entirely non-irritating when used in the urethra, may be an ideal material for post-operative cholangiography.

In performing operative cholangiography to determine the size and course of the common duct, the presence or absence of common duct stones, and to demonstrate a biliary-pancreatic intercommunication, if present, it has been our custom to administer 50 c.c. of 35 per cent diodrast, an aqueous contrast medium, via a needle in the cystic duct. During the injection 10 c.c. of N/10 HCl is instilled into the duodenum through a duodenal tube. Visualization of the pancreatic duct gives proof of a common passageway between the biliary system and the pancreas.

This examination is made by placing a 10 x 12-inch or 11 x 14-inch film, preferably with stationary grid, beneath the patient in line with the epigastric region. The x-ray tube is then centered over the epigastrium, and, while the anesthetist suspends the patient's respiration, the exposure is made. The radiograph is then processed immediately, so that the surgeon may have it to guide him in exploring the common duct and sectioning the sphincter of Oddi, if this procedure is indicated. Additional radiographs may be required and are made as indicated by the situation at hand.

Post-operative cholangiography may be performed in several ways. A very satisfactory procedure is to inject up to 10 c.c. of the selected opaque substance directly into the common duct T-tube, or the gallbladder drainage tube, slowly but continuously, while observing its progress with the fluoroscope. After the injection is completed, stereo-

scopic antero-posterior radiographs are made as a routine procedure. If an unusual situation is observed, it may be necessary to make additional radiographs, using other projections, including both obliques and a lateral.

Post-operative cholangiography is very useful in demonstrating the presence or absence of common duct obstruction, due to stone, edema of pancreas, or spasm of sphincter of Oddi, as well as to reveal the contraction of the normal duodenal wall, after administration of morphine, which prevents reflux of duodenal content into the bile ducts.

Radiographs of good quality are essential to the performance of cholangiography, and this requires apparatus capable of delivering an x-ray beam of sufficient intensity to produce adequately exposed radiographs in a short period of time, preferably one-fourth second, or less.

#### VITAMINES CAPABLE OF HARM

(T. C. Wyatt et al., Syracuse, N. Y., in *Jl. A. M. A.*, Sept. 23rd)

A white girl, 3, admitted to hospital August 24th, 1948, with anorexia, tenderness of the extremities, low-grade fever, weakness, pronounced irritability and severe generalized pruritus; symptoms were of two weeks' duration. The child felt that she could not walk properly and described a sensation of "walking on stones." She cried whenever the mother attempted to pick her up. She had had frequent infections of the upper part of the respiratory tract but no childhood diseases. Feeding in infancy evaporated milk with the usual vitamins, cereals and vegetables.

The skin was pale with severe excoriations of the legs and back. There was mild cervical adenopathy. The arms were tender; other symptoms general weakness, extreme irritability and unsteadiness of gait.

Blood count normal; ten days later whites 14,900, with a normal differential. X-rays of the long bones showed elevation of the periosteum with subperiosteal new bone formation along the medial aspect of the midportion of the shafts. The metaphyses and epiphyses appeared normal.

After 10 days in hospital less pruritus and less irritability, less weakness and unsteadiness of gait. Treatment was by sedation, topical applications, and vitamin B. Discharged after 18 days in hospital, moderately improved, with diagnosis of periostitis, and pruritus—cause? Nine days after discharge from hospital she showed same clinical condition, plus pronounced loss of hair on the sides of the head anterior to the ears and decided recession of the hair line along the forehead, the remainder of the hair thin and dry. Similarity between this and the reported cases of hypervitaminosis A was recognized. On questioning the mother it was learned that the patient had been receiving 400,000 to 500,000 units of vitamin A and 60,000 to 70,000 units of vitamin D daily since 14 months of age, a period of almost two years. Serum vitamin A determination done at this time revealed 127 micrograms (423 units per 100 c.c., normal 15 to 60). On discontinuance of the vitamins the pruritus subsided within a few days. Bone tenderness, irritability and weakness disappeared rapidly, and within a month recovery was complete. May 28th, 1949, both ulnas were normal.

#### A BETTER TREATMENT OF ARTHRITIS OF THE KNEE (Otto Meyer, New York City, in *Industrial Med.*)

Experience in treating 800 patients who were suffering from inflamed knee joints has shown compression bandages to be far superior to other methods of therapy.

The author uses the combination (contura plus pressoplast) pressure bandage applied from the base of the toe to the middle of the thigh, heel enclosed also.

The instep and achilles tendon are protected with gauze spread with vaseline, the region directly below the knee with plain gauze.

# DEPARTMENTS

## HUMAN BEHAVIOUR

REX BLANKINSHIP, M.D., *Editor*, Richmond, Va.

### REFLECTIONS ON CRIMINAL CONDUCT AND ITS TREATMENT

SO MUCH of what one sees in medical journals on the subject of criminal conduct and accountability is manifestly the product of unsound minds, that when a sound, sensible article shows up it is welcomed with fervor. Such an article is that of a Scottish practitioner and teacher in this field,<sup>1</sup> and the gist of what he says is proffered you, along with somewhat of comment.

My interest and experience in relation to the criminal law dealing with persons accused of murder or other serious offences has extended over many years, and has concerned itself essentially with those whose sanity had been brought into question.

When a medical opinion is submitted it should be stated in terms which can be easily understood and should deal with actual facts. Medical theorizing, especially in the witness-box, is as much to be condemned as the hypothetical questions of the lawyer. The signs and symptoms of the disorder are often entirely subjective, and neither the cell of the accused nor the prison governor's orderly-room or office provides a neutral enough atmosphere for so serious and skilled an examination.

In nervous or mental cases we cannot, except rarely, point to any specific causation as in the case of physical illness. We require to content ourselves with saying that the personality of the individual has become twisted as the result of many factors involving hereditary or genetic factors, environmental surroundings, or perhaps more personal matters of a physical or emotional nature. The background in which the crime occurs is an important part of the total picture. Even with all those points in mind, it may still prove extremely difficult to say where sanity ends and insanity begins. There are many sane persons whose conduct is extremely eccentric and foreign to social custom, whereas there are many technically insane persons whose conduct never leads them into any serious trouble.

In cases involving a capital charge the plea of mental disorder in bar of trial or sentence is submitted too frequently. Doctors and lawyers are equally to blame: doctors because they are too much influenced by sympathy and theory; lawyers

because they have been educated to present every case in as favourable a light as possible. In cases of a less serious type the plea of mental disorder is not submitted often enough, largely because the accused would prefer to serve a defined prison sentence than undergo prolonged treatment in a mental hospital. The danger of such a situation is self-evident, because it is just those cases which swell the ranks of the recidivists. Furthermore, it is rare for criminal conduct to be the first sign or indication of mental disorder. The mentally disordered criminal is a person who for years, or months, or weeks beforehand, may have given evidence of his mental abnormality, and in numerous cases medical advice may have been sought beforehand. When this has been so it constitutes strong presumptive evidence of the bona fides of the case.

Cases of psychosis or unsoundness of mind come into the ambit of the M'Naghten rules; the rules are no longer in harmony with medical knowledge, and judges vary widely in their interpretation of the rules. The only way I see of getting round this is by improving the professional training of both the lawyer and the doctor and by the development of medico-legal societies.

It is impossible to define degrees of unsoundness of mind—one person is not necessarily more mad than another—but there are many different forms of mental disorder, all of which equally should exonerate a person from a charge of criminal conduct—for example, melancholia, schizophrenia, paranoid states, general paralysis, senile dementia, epilepsy with insanity, and many others. In many of these cases the individual's mind is clear enough to enable him to know what he is doing, but at the same time the true significance of his conduct is not appreciated in relation either to himself or to others. Persons who are proved to be insane in a medical sense are, in my opinion, not legally responsible for the crime which they may commit. Lord Justice Clerk Inglis said: "In a strictly legal sense there is no insane criminal. Concede insanity and the homicidal act is not criminal. The act of the insane, which in the sane would be criminal, lacks every element of crime."

In every case involving capital punishment a psychiatric examination would be advisable. For those persons who have been adjudged as of unsound mind I would advocate:

Care and treatment in a special type of mental hospital independent of a prison regimen.

Parole might be used more frequently.

Transfer to civil hospitals should be made more often and dangerous patients in civil hospitals should be more easily and readily transferred to the prison psychiatric unit.

Remedial workshops equipped with modern ma-

<sup>1</sup> Sir David Henderson, Edinburgh, in *British Med. J.*, Aug 5th.



chinery would be a valuable aid in the rehabilitation of such cases.

Those cases which require observation and a detailed psychiatric report before trial should be transferred, for the time being, to a suitable psychiatric clinic or to a special ward in a mental hospital.

The law refuses (except in the most gross cases) to allow mental deficiency to be utilized as a defence in bar of trial or sentence. It was in such a case that the Lord Justice Clerk (Aitchison) made the scathing comment: "If the law had kept pace with medical practice this prosecution would never have arisen. On the medical evidence this woman should never have been brought to trial." It should always be remembered that mental defect is one of the most prolific factors in criminal conduct, and that repetition of the offence is frequent. In consequence a return to social and family life should always be regarded with meticulous care, and should not be considered advisable until a sense of social responsibility has been built up.

The individuals who form the group of psychopathic personalities (character anomalies) constitute the biggest, most serious, and most controversial medico-legal and social problem. They are social misfits in every sense of the term. They are persons who have failed in the psycho-biological development. Such a failure may not be due to any fault in their environment or education, but it is something which is inborn, something which is akin to the lack of intellectual development which characterizes the mental defective.

They fail to appreciate reality; they are fickle, changeable, lack persistence of effort, and they are unable to profit by experience or punishment. They are dangerous when frustrated. They are devoid of affection, are cold, heartless, callous, cynical, and show a lack of judgment and forethought which is almost beyond belief. They may be adult in years but emotionally they remain as dangerous children whose conduct may revert to a primitive subhuman level. They can behave as ordinary, likeable, attractive human beings, but they harbour in their inner depths instinctive forces which on occasion overwhelm them. In conversation and under controlled conditions no special flaw may be discovered to enable medical certification to be effected. They are in the most deplorable of all conditions—not sane enough to be at large and not insane enough (in terms of certifiability) to be suitable for Bedlam. Such persons are driven by what may be called their collective unconscious to deeds of violence which are as uncontrollable as a tidal wave.

It is important to understand that all the vagaries of conduct exhibited by the hysteric, the neurasthenic, the anxiety states, or the obsessive-

compulsive are conditions which are not mere foolishness and something which the individual can control. Such states are the result of inner conflicts and emotional disturbances which are overpowering. When such conflicts can be resolved the patient may lead a moderately happy and contented life, but otherwise nervous fears, strange thoughts, compulsive acts, may take the field in an attempt, distorted though it may be, to bring matters to a solution.

#### *Comment by The Editor*

We are prepossessed in favor of a person who freely admits the limitations of his knowledge, who says that the solution of certain of the problems present themselves is difficult, some of them even impossible. This doctor-essayist is such a person. And he concedes that for certain abuses and inequities in medico-legal cases doctors and lawyers must share the blame.

It is particularly gratifying to me to learn that I have the company of a British Lord Justice in my 40-year-long contention that to speak of "the criminal insane" is to talk nonsense. An insane person can not commit a crime. Hail Lord Justice Inglis! and your pronouncement: "The act of the insane, which in the sane would be criminal, lacks every element of crime."

Sir David's wonderful picture of those doubly-unfortunate and doubly-trying persons, classified as psychopathic personalities, will help us to better understand them and to better present their cases to skeptical judges and juries. His advice as to how best to proceed in the investigation of a question of sanity and accountability, and how best to utilize the results of such investigation is scientific; it is human; it is wholesome and just—for it is in the best interest of us all.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### SURGICAL TREATMENT OF PROSTATISM

ALMOST 50 PER CENT of males after 55 have disease of the prostate, which can be divided into the irritative and the obstructive types. Beatty's<sup>1</sup> paper is concerned with the obstructing prostate and particularly with those cases in which the obstruction is severe enough to require surgical correction.

The cases commented on here are as they were admitted to the urological service in the Uniontown Hospital during the years 1942 to 1946.

The number of patients in each decade was as follows: 5th, 3; 6th, 28; 7th, 96; 8th, 83; 9th, 16. Of the entire series, 78 per cent of the obstructions occurred between the ages of 60 and 80.

1. R. P. Beatty, M.D., Uniontown, Penn., in *Geriatrics*, July-Aug.



Forty-one patients had symptoms less than one month prior to admission; 72 from one to six months; 28 from six to 12 months; 27 from one to two years; 47 over two years; and as to 13 patients this information could not be obtained.

One hundred patients had acute retention on admission; 57 had residual over six ounces; 67 had residual urine of less than six ounces; and four had no residual urine.

Fifty per cent of the patients had symptoms of six months or longer and many of these came only because of acute retention.

The average hospital stay for the whole group was 30 days. This seems excessive until one considers that the majority were prostatectomized, that 70 per cent of the total had acute retention or a large amount of residual urine on admission, and that a few required extensive hospitalization because their health was much deteriorated from long-standing obstruction. But for these factors, the average hospital stay would have been less than three weeks.

In the resected cases the average period of preparation for surgery was two to five days; for prostatectomies, the average was 11.2 days. This latter figure included the two-stage operation which was reserved for the poor-risk cases, the badly infected and patients over 80 years of age. The first-stage cystostomy was usually done within 24 hours of admission.

The mortality, including all deaths irrespective of cause, was: in 1942 one death (3.1%), in 1943 three deaths (5.8%), in 1944 five deaths (8.8%), in 1945 seven deaths (19.4%), in 1946 three deaths (5.7%)—a total of 19 deaths (8.3%).

The causes of death of the 19 patients were as follows: bronchopneumonia in four, coronary occlusion in three, pulmonary embolism in three, diabetic coma and pulmonary embolism in one, post-operative shock in one, circulatory failure in one, bilateral pyelonephritis in one, embolic pneumonia in one, postoperative hemorrhage and pyelonephritis in one, carcinoma of prostate with cachexia and polyneuritis (alcoholic) in one, mitral insufficiency with hemorrhage and infection in one, and urinary extravasation and peritonitis from spontaneous rupture of vesical neck in one.

The complications that occurred during hospitalization were: epididymitis in 22 cases, cardiac decompensation in 19, embolism in 18, pyelonephritis in 11, postoperative hemorrhage in seven; thrombophlebitis in seven, pneumonia in six, pleurisy in two, coronary occlusion in two, rupture of bladder in two, parotitis in one, ischiorectal abscess in one, and wound separation in one. It is gratifying to note that only one case of wound separation requiring resuturing occurred in the entire series.

These were the types of operations performed:

one-stage suprapubic prostatectomy in 90 patients; 2-stage suprapubic prostatectomy on 57, cystostomy (suprapubic) only on 20, transurethral resection on 66, suprapubic lobectomy on one, and suprapubic transvesical prostatic resection on one.

The types of anesthesia used were spinal for 123 patients, pentothal sodium for 107, pentothal sodium plus local for 40, local for 32, nitrous oxide plus oxygen for three, and spinal plus pentothal sodium for one.

Adequate preoperative drainage whether by indwelling catheter or suprapubic cystostomy reduced to a minimum the bleeding from the prostatic cavity following enucleation.

A pathological diagnosis of benign prostatic hyperplasia was made in 153 cases, adenoma in five, fibroma in six, carcinoma in 51, chronic fibrosis of the prostate in 14, congenital hypertrophy of trigone in one, and benign prostatic hyperplasia plus carcinoma in three—a carcinoma incidence of 29.2 per cent.

Recurrent obstruction was encountered 28 times either following an earlier prostatectomy or an inadequate resection. Bilateral vasoligation was performed 21 times; bilateral enucleation of testicular substance 14 times. This latter procedure was not done in our clinic prior to 1944 and was done since then only in cases of carcinoma.

The author has analyzed 228 cases in which 331 operative procedures were performed for prostatic obstruction during a 5-year period. The greatest number was in the 7th decade; 78 per cent in those between the ages of 60 and 80.

Patients treated by operation required an average of 11.2 days of preparation. Resected patients required two to three days on an average.

The total mortality was 8.2 per cent. Causes of morbidity and mortality presented a very interesting and informative study. Selecting only those cases, nine in all, in which death was directly related to the surgery employed, reduces the mortality to 3.9 per cent. Epididymitis occurred in 22 cases, an incidence of 8 per cent.

Intelligent use of the antibiotics, available during only the last year of this survey, further reduced morbidity and mortality.

The condition on discharge was good in 112, fair in 81, and unsatisfactory in 15. This was based on general recovery, on functional urinary result and presence of infection in urine. In no case has there been a persistent urinary fistula. A few, mostly post-resection, have had persistent incontinence.

Bleeding was controlled in the open operation by the use of a rubber bag or plain packing. In a large number of the cases the capsule was also sutured. The Foley bag catheter was routinely employed following resection.

One hundred fifty-three of the removed glands were benign hyperplasia; five mere adenomata; six were fibromata; 51 were carcinomata; 14 were chronic fibroses; three were benign hyperplasia with carcinoma and one was congenital hypertrophy of the trigone. This patient was 19 years of age.

There were 28 instances of recurrent obstruction, some following earlier prostatectomy elsewhere and the remainder the result of inadequate resection by the author.

The author arrives at the definite conclusion that prostatic surgery should never be the last resort, but should be utilized early when conservative measures have failed to relieve the obstruction. It is hoped that the time will soon come when with the understanding of the cause of this condition prophylaxis and conservatism will replace surgery.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### RAPID RELIEF OF ACUTE "STIFF NECK" BY ETHYL CHLORIDE SPRAY

TRAVELL<sup>1</sup> reports on an entirely satisfactory experience in treating a usually painful and trying affliction. Twelve cases of acute stiff neck were treated by ethyl chloride spray. Duration of pain and restricted motion of the neck ranged from one-half to seven days. Onset was sudden in every instance; usually the patient awoke in the morning with intense pain in one side of the neck on turning the head.

It is important not to frost the skin. The spray is applied intermittently and briefly. If aching develops, or referred pain, the interval between sprayings is lengthened. Spots painfully cold to the spray are usually hypersensitive to deep pressure; the overlying skin is sprayed in even rhythmic sweeps until sensitivity to cold and pressure has been reduced.

The spray should be moved slowly over the skin in one direction. The sweep starts at the trigger area and travels toward the reference zone. Spray the entire zone in this manner. Thus, in the case of trigger areas in the trapezius, the spray should travel from the top of the shoulder inward to the suprascapular area and upward over the posterolateral region of the neck; when headache is present, it may be carried forward over the temple. In the case of trigger areas in the levator scapulae at the angle of the neck, the direction of the sweeps is outward, backward and downward from the angle of the neck. The spray meets the body surface at an acute angle. Gently stretch the painful muscles by active motion of the head and neck at intervals between sprayings.

1. Janet Travell, New York, in *Jt. Amer. Med. Women's Assn.*, Mar.

Movement of air in the room is usually assured by opening a window. Since the vapor is heavier than air, the patient's head is elevated above the level of the part sprayed. Since it is readily inflammable, cigarettes and sparks in electrical equipment are obviated.

In 9 of the 12 patients in this series, pain and limited motion of the neck disappeared in the course of the first treatment and did not recur to any appreciable degree. Only one treatment was given. In several instances, after only two or three sweeps of the spray over the trigger areas, on the first movement of the head motion was found normal without pain. Here no stretching of the muscles was required. In other cases, improvement was progressive during several minutes of movement and spraying.

In three cases, more than one treatment was given. The first application produced immediate, but not complete, relief of pain and release of limitation, and stiffness recurred to some extent during the day or that night. Two treatments given on 3 successive days in which the neck was sprayed 6 or 7 times.

The least satisfactory response was obtained in a patient who received five treatments in three days; at first the relief did not last long, and stiffness reappeared. After the 4th and 5th treatments improvement was maintained. A sixth spraying three days later when neck pain was still negligible.

### COMPARISON OF MERCURIAL DIURETICS AND ROUTES OF ADMINISTRATION

THE MERCURIAL DIURETICS are many, and each claims for itself superiority. Read the conclusions of two doctors<sup>1</sup> who made an impartial investigation.

Subcutaneous thiomerin is a desirable diuretic in patients who tolerate it without reactions. Preliminary testing with small doses of thiomerin is important because of the large number of painful local reactions and occasional gastrointestinal symptoms. The status of the circulation appears to be a factor in the local reactions. Reactions to administration in the gluteus maxims were few. However, reactions with mercurhydrin were about the same by this route, and thiomerin was not thought to have any advantage, especially since it is more difficult to store and deteriorates with time.

A certain number of patients still will have to be treated by the intravenous route for reasons of comfort. Work on animals would indicate that thiomerin has less myocardial toxicity by this route than other mercurials. However, it must not be given to patients who get systemic reactions to the drug.

1. W. J. Atkinson, Jr., Mobile, and L. V. Mulligan, St. Louis, in *Jt. Mo. Med. Assn.*

Occasional patients consistently experienced a better diuresis after one particular mercurial, but the average changes for the entire group were about equal for equal doses regardless of the mercurial or route used.

## PEDIATRICS

ALBERT M. EDMONDS, M.D., *Editor*, Richmond, Va.

### PINK DISEASE

PINK DISEASE is a specific disease which is becoming increasingly common; more than 1000 cases have been reported. It occurs sporadically and almost epidemically. "Raw-beef hands and feet" gave the name, and suggested that the disease was a peripheral neuritis.

These introductory sentences in an article by a Scotsman<sup>1</sup> attracted my attention, since I had heard nothing of such a disease and wondered about its appearance on this side of the Atlantic.

Griffith went on giving more particulars.

During a 4-year period, 27 cases have been observed in this rural area; there were four deaths, 21 made complete recovery, one developed bronchiectasis after pneumonia during the course of the disease, and one had a residual chronic bronchitis.

Without exception the cases presented prodromal nasopharyngeal catarrh, occasionally diarrhea and vomiting, anorexia, fretfulness, irritability and a rash. An interval of from one to two weeks occurred between the respiratory and the other symptoms.

Peculiar positions were adopted, the commonest a knee-elbow position with the face pushed into the pillow. While awake intermittent screaming or self-mutilation alternated with extreme misery; resentment of handling was always a feature and in all the victims the hands and feet were red, swollen and cold.

Constant findings were a persistent tachycardia (160-180), excessive sweating, desquamation of the skin of palms and soles, salivation and hypotonia. Invariably there was regression in physical attainment. Those children in whom b. p. could be measured showed hypertension.

A variable and transient feature was the rash which was miliarial, often with a minute pustulation.

Loss of tendon reflexes was not found uniformly. In four cases a marked hirsuties occurred. A heavy growth of black hair on the back and limbs, and the hair on the scalp invaded the forehead, temples and face in front of the ears as far as the angle of the jaw. The eyebrows were thick and prominent. In three cases, with improvement, hirsuties disappeared. The fourth patient with hirsuties died.

In each case a routine radiograph of the chest, wrist and knee showed no evidence of rickets, scurvy or primary lung tuberculosis.

The prodromal catarrh suggests an infective origin but the cause is unknown. Vitamin-deficiency as a cause has had numerous protagonists and there are several reports of cures with vitamins B<sub>1</sub>, B<sub>2</sub>, E, pyridoxine and also raw liver.

Parents were encouraged to give the patients cold meals of high protein content. In each case vitamins A, B<sub>1</sub>, C and D were given by mouth. Non-irritating clothing was worn and calamine lotion was applied freely to the skin. After initial disappointing results with sedatives no treatment of this nature was given.

In 13 unselected cases vitamin B<sub>1</sub> was given in doses of 25 mgm. IM, twice weekly, in addition to the vitamin supplements by mouth; no evidence of any effect.

There was a preponderance of cases in the farming community.

Tachycardia persistently above 160 warrants a poor prognosis.

The lack of response to any one of the numerous form of therapy gives some support to the view that the disease is a virus encephalomyelitis.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### RECENT DEVELOPMENTS IN ANTIBIOTIC THERAPY

KIRBY'S<sup>1</sup> account of the present status of therapy with the new classes of remedies is abstracted.

There are only three commonly encountered conditions in which sulfonamides are the drug of choice, in uncomplicated urinary-tract infections, bacillary dysentery and meningococcal meningitis. Sulfonamides are often administered in conjunction with penicillin or other agents in the treatment of certain severe infections, such as pneumococcal meningitis. Triple sulfonamide mixtures, which reduce the incidence of crystalluria, appear to represent a real advance. Gantrisin, a new sulfonamide, is more soluble than any of the others and appears to be equally effective.

Most noteworthy in penicillin therapy has been the adoption of slowly-absorbed procaine penicillin G preparations. Even subacute bacterial endocarditis, except when caused by resistant forms of

1. Gwyn Griffith, in *Edinburgh Med. J.*, April.

1. W. M. M. Kirby, Seattle, in *J. A. M. A.*, Sept. 16th.



streptococci such as enterococci, respond favorably to this simplified form of therapy.

Tuberculosis remains the principal disease for which streptomycin therapy is indicated. Urinary-tract infections due to *Pseudomonas aeruginosa* *Bacillus proteus* are possibly still best treated with streptomycin, and this antibiotic plays an important role given in combination with other agents in enterococcal endocarditis. There is doubt that dihydrostreptomycin is less toxic than streptomycin.

Aureomycin, chloramphenicol and terramycin characteristics are low toxicity, the great number of infectious agents against which they are effective and good absorption from the gastrointestinal tract, which makes oral administration feasible. Terramycin has been used clinically less than a year. It resembles aureomycin more closely than chloramphenicol.

For all three the daily oral dose is 2 to 4 Gm., in equal portions q. 4 to 6 hr. It is possible that smaller amounts may suffice. In pneumococcal pneumonia some patients have been found to respond in a highly satisfactory manner to only 1 Gm. daily, given in a single dose.

In contrast to penicillin, the action of the three new antibiotics is primarily bacteriostatic rather than bactericidal. This accounts for the poor results obtained with aureomycin and chloramphenicol in the treatment of subacute bacterial endocarditis. In the treatment of streptococcal sore throat the clinical response is excellent, but the carrier state following aureomycin therapy much higher than in patients treated with penicillin. Other differences between *in vitro* and *in vivo* responses are not so easily explained. *S. typhosa* is highly susceptible to both aureomycin and chloramphenicol *in vitro*, yet chloramphenicol is vastly superior in the treatment of typhoid.

Many of the infections in which aureomycin, chloramphenicol and terramycin exert their most striking effects are uncommon in the U. S.—as typhoid fever, psittacosis, tularemia, lymphogranuloma venereum, granuloma inguinale and the rickettsial infections. Infections commonly occurring in this country in which these antibiotics are of value are pneumonia and other respiratory infections, urinary-tract infections, cellulitis, abscesses, peritonitis, diarrhea, brucellosis and penicillin-resistant fevers.

Respiratory infections constitute the largest single group of diseases for which the orally administered antibiotics are currently being used. The common cold, undifferentiated acute respiratory disease, and influenza A and B make up the majority of such infections, and the value of antibiotics against this group of viruses is far from established. Treatment of such conditions on a large scale is probably justified prophylaxis against

pneumonia even if the causative viruses are not affected. Pertussis appears to respond to aureomycin.

Of the various types of pneumonia all of which respond to the newer agents, a strikingly beneficial effect from penicillin may be expected only in those due to pneumococci and streptococci. Since the cause of pneumonia is often difficult to determine clinically and oral treatment offers such marked advantages, it is probable that most, if not all, pneumonias will be treated with one of the newer antibiotics when cost is no longer a factor.

In urinary-tract infections there is usually a good initial clinical and bacteriologic response to treatment, except with *B. proteus* or *Ps. aeruginosa*. Even with the colon-aerogenes group, however, relapses are common if the infection is chronic or if obstruction exists. Excellent results have been obtained in the treatment of cellulitis and certain types of abscesses. Here again the possibility of penicillin-resistant staphylococci is to be considered in choosing an antibiotic. The results in peritonitis and brucellosis are most gratifying. As a cause of diarrhea, amebiasis is of special interest because of its apparent response to newer agents, in contrast to its lack of susceptibility to any of the earlier antibiotics. Viral agents causing gastroenteritis are apparently not affected, and the response in *Salmonella* infections is far from dramatic. In dysentery caused by *Shigella*, results are similar to those obtained with sulfonamides, which are probably still to be preferred because of their lower cost.

Penicillin-resistant fevers constitute an indication for aureomycin, chloramphenicol or terramycin—a wide range of action.

An important field of chemotherapy is concerned with the effectiveness of combinations of antibiotics, with one another, or with other agents such as the sulfonamides. There are few clinical conditions in which two agents have been clearly proved to be more effective than one. In enterococcal endocarditis cures have been obtained with a combination of penicillin and streptomycin, whereas the response to either alone is poor.

Sulfadiazine with streptomycin is effective in brucellosis. This regimen has now been supplanted by the newer antibiotics, and there is some evidence that a combination of aureomycin and streptomycin may be superior to aureomycin alone.

In the prevention of postoperative surgical infections and of postpartum sepsis, the prophylactic use of penicillin has greatly decreased morbidity and mortality. Important also is the prophylactic value of penicillin in syphilis and gonorrhea, chloramphenicol in scrub typhus, and penicillin in rheumatic fever. Rheumatic fever is apparently prevented by early, intensive therapy with penicil-



lin after a streptococcic sore throat has begun. This observation, if confirmed and widely applied, may well lead to a pronounced decrease in this important cause of valvular heart disease.

Mortality rates for scarlet fever, tuberculosis, syphilis, whooping cough, pneumonia and enteritis are at an all-time low (during 1949)—for pneumonia 40 per cent below ave. for 1938-1947. There is every reason to believe that this favorable trend will continue and that the management of all forms of infectious diseases will increase in effectiveness in the ensuing years.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### THE VALUE OF AN EFFICIENCY EXPERT ANALYSIS OF YOUR HOSPITAL

IF THERE is a more perplexing problem on the face of the earth than that of operating a hospital, I do not know what it is. There are so many angles and pitfalls that the average Board of Trustees and the Hospital Administrator are perplexed, puzzled, bewildered and sometimes bedamned if they know what to do about them. One not only has to be an expert personnel manager, an expert bookkeeper, an expert sales resister, but has also to be a past grand master at handling professional men and women. Experience will help, but it takes a good part of a man's lifetime for him to gain sufficient experience to become a proficient trustee or hospital administrator. What, therefore, can be done to increase the wisdom and efficiency of those operating hospitals.

The efficiency expert has the advantage of being unbiased toward any member of its personnel. He, therefore, starts off with the assumption "by their fruits, ye shall know them"; and if a member of the personnel or a department is not producing, he uses his fine-tooth comb to rake out the chaff. He can be of enormous help if he is practical minded and if he, himself, has had experience in the field that he is now investigating. As even an efficiency expert can produce a confusing report, the writer would urge that all hospitals contemplating having an efficiency expert go over the institution, employ one who has served in the capacity of hospital administrator, superintendent or trustee.

If the expert is investigating the purchasing procedure of the dietary department without knowing the capacity of the store room and the ice box and their ventilation, his recommendation might be suitable for a hospital recently built after the plans of a practical architect, but not at all so for this hospital. Where and when can anyone find a practical hospital architect? These men have never

operated hospitals. They have never tried to roll a stretcher from the room into the hall of a hospital. They have never transported a patient from the x-ray to the operating room, nor have they ever operated on a patient in the operating or cystoscopic room. It follows then that any expert's report about the dietary department must take into consideration the location, size and shape of the kitchen, the storage and the refrigeration facilities. Another important matter here is the amount of labor required to deliver the food in proper condition to the patient's bedside. Some hospitals can use a certain type steam table to advantage; other hospitals are so built that the dumb waiter will have to carry the food from one floor to another; still others, because of the condition of the floors, on various levels, and the inaccessibility of a dumb waiter (if they have one) have to transport by bus boys or girls each tray from the kitchen to the patient. Maid service costs more than steam carriage service.

Let us consider the drug department. A hospital with a pharmacy attached with a regular pharmacist in charge has to buy differently from one whose drug department is under the supervision of a nurse or a business administrator. Prescriptions can be filled most profitably by the hospital pharmacist. Here again, one meets the problem of increased personnel—in this instance the scarcity of pharmacists. It would be impractical for your efficiency expert to recommend that the hospital employ a pharmacist until he had investigated and found the number of prescriptions being sent out of the hospital to be filled by private drug stores. A nurse or an office assistant could keep an inventory of the already purchased, prepared drugs just as well as a pharmacist. The purchasing of drugs in itself requires a vigilance concerning price changes that few hospital administrators exercise. Aspirin may be bought from one company for \$1.25 per thousand, whereas another company selling aspirin will ask \$2.00 per thousand. At the present time, with the rapidly changing prices of the new antibiotics and antiarthritics, it is even more important that the one purchasing the drugs be always on the watch for a change in price. The efficiency expert can point out many of the smaller, as well as larger, errors on the part of the personnel. This will help the trustees, on the one hand, but he should also offer practical recommendations based not upon standard, but upon individual, institutions.

It sometimes seems that about all a Board of Trustees gets out of an efficiency report is backing for discharging some worn-out, inefficient employee. If this is true, then what the Board of Trustees needs is to be replaced themselves by more intelligent, fair-minded men with backbone enough to dismiss anyone who is not an asset to the hospital.

The day is not far distant when hospital trustees will have to depend more and more upon the report of the efficiency expert. Therefore, to those who are anticipating such a service to the hospital, the author would urge that they, themselves, work in every department of the hospital; then their report, with its recommendations, would be based upon practical experience, cut and arranged to suit the particular hospital inspected. The writer predicts that many hospital efficiency experts will be found in the country ten years from today. Too much money, taxpayers' money, is spent unwisely by those who are inexperienced and at times impractical, for the good of the country.

## GYNECOLOGY

### THE NORMAL PROTECTIVE PHYSIOLOGY AND CHEMISTRY OF THE CERVIX UTERI

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THE CERVIX UTERI is usually described as the cylindrical lower end of the uterus, its walls made up predominantly of fibrous connective tissue and its narrow canal communicating with the vagina below and the uterine cavity above. Because of these brief anatomical facts, the cervix has been considered of importance chiefly from a mechanical standpoint. In the past decade, however, there has been an increasing interest in the physiology whereby the cervix not only maintains its own integrity, but contributes to the protection and transmission of sperm. The latter subject has recently been reviewed by Shettles.<sup>1</sup>

#### I. *The Self Protective Physiology of the Cervix*

##### (A) *Self Protection Against Trauma*

Since the cervix must first form a barrier, then an avenue of escape for the products of conception, it is not surprising to find it endowed with tissue which is labile in its elasticity. Thus, because of a peculiar sensitivity to estrogens and progesterone found in no connective tissue outside the pelvis, the cervical stroma in pregnancy becomes so soft and succulent that it suffers little damage by the passage of the fetus. If this peculiarity in reaction to hormones did not exist, the cervix could not protect itself from severe trauma during labor.

##### (B) *Self Protection Against Infection*

A wide variety of organisms including virulent streptococci have been demonstrated in the lower end of the cervix<sup>2</sup> whose flora seems comparable

to that of the vagina.<sup>3</sup> Whether or not some of these organisms penetrate the mucosa is a disputed question. Except in the newborn, the stroma of even apparently healthy cervixes contains lymphocytes, and this finding is usually interpreted as evidence of low-grade infection. But this conclusion is not altogether convincing and scattered lymphocytes might well be a normal component of adult cervical stroma, just as follicle-like groups of lymphocytes are usually found in endometrial stroma. However, assuming that low-grade infection is present in most cervixes, one can find several physiological and chemical aids in protecting the cervix from the spread of infection.

First, it has been shown that the cervical mucosa and glands are shed monthly at the time of the menstrual period and that following this, there is rapid regeneration.<sup>4</sup> Thus, there is a periodic removal of the tissue which might be the site of early bacterial invasion. It is noteworthy that the endocervix is denuded only at a time when the bloody uterine discharge would furnish a source of sterile lavage and wash away bacteria before they could invade the raw surface. At all other phases of the menstrual cycle, the mucosal surface is intact, and there is no fraying of the cell membrane with the secretion of mucus.

Another source of protection against bacterial invasion is the cervical mucus. Its power to inhibit hemolytic streptococci and *Staphylococcus aureus* in vitro has been shown.<sup>5</sup> Its potency as a bacteriostatic agent extends to *Neisseria gonorrhoeae* only during the luteal phase of the menstrual cycle when the mucus is acid in reaction.<sup>6</sup> Likewise, its potency against other organisms would be expected to vary according to the pH of the mucus in various phases of the menstrual cycle as compared with the ideal pH for growth of the given organism.

In vivo, the antiseptic effect of cervical mucus is enhanced by its physical properties which would tend to prevent bacterial invasion in the estrogenic phase of the cycle by the copiousness of the discharge, and in the luteal phase by its great viscosity.

##### (C) *Self Protection Against Carcinoma*

Until carcinogenesis and the earliest changes caused by carcinoma are understood, no study can be made of the mechanisms if any whereby the cervix opposes malignant growth. At present, only a few isolated facts are known and their significance is a matter of speculation.

During pregnancy, presumably due to hormonal influences, the cervical squamous epithelium shows marked hyperplasia. In some instances this reaction is not alarming, while in others, the picture microscopically is almost that of pre-invasive carcinoma. The distinguishing features are the minimal

changes in size and shape of cells and the lack of bizarre mitotic figures though mitosis is increased and occurs at various levels rather than in the basal layer only.<sup>7</sup> Much might be contributed to the understanding of carcinogenesis if one could find out why most individuals evidently have factors which limit the growth stimulus and avoid this pseudomalignant change.

Another fact whose significance is not understood is the absence of glycogen in malignant epithelial cells. Shiller<sup>8</sup> pointed out that the superficial layer of normal cervical epithelium contains a water-soluble glycogen, while this "glycogen of the epithelium" is absent from carcinomatous cells. It is interesting to speculate as to whether this absence of glycogen represents simply a failure of anaplastic cells to maintain one of their metabolic functions, or whether glycogen, as long as it is maintained in the cells, serves as a defense against carcinoma.

Though no special study of the stroma has been made in carcinoma of the cervix, it seemingly reacts like other connective tissue adjacent to epidermoid carcinoma with an initial increase and later destruction of elastic and collagenic fibers. The stimulation of fibroblastic tissue to wall off masses of carcinoma cells is noticeable after x-ray therapy.

## II. Protection of Uterine Cavity by the Cervix

It is obvious that the cervix offers physical support to the products of conception, and protects both the pregnant and non-pregnant uterus from ascending infection. The role of cervical mucus in preventing bacterial ascent from the vagina has been discussed above. It has been shown that estrogens cause an increase in volume and a marked decrease in viscosity of cervical secretions while progesterone causes a decrease in volume and increase in viscosity.<sup>1 4 5 10 11 12</sup> This observation is not only based on changes in cervical mucus during various phases of the menstrual cycle, but has been confirmed by administration of various hormones to castrated and post-menopausal women. The maximum utilization of this phenomenon in protecting the uterine cavity from bacterial invasion is seen in pregnancy when both estrogen and progesterone influence are great so that large amounts of cervical mucus are secreted, but the viscosity is so great that a semisolid plug fills the cervix as effectively as a cotton stopper in a culture tube.

## III. Protection of Sperm by the Cervix

The human cervix seems to form an important and usually essential link in the chain of events which carry the sperm from the vagina to the waiting ovum. No artificial medium for maintaining the viability of spermatazoa can compare with cervical mucus at the peak of the estrogenic phase

of the menstrual cycle. At that time, the volume of cervical secretion has increased about ten-fold with a proportionate increase in water content and decrease in viscosity. Thus motility of sperm is enhanced and the penetrability is so increased that spermatazoa can travel through the cervical secretion at a rate of three or more millimeters per minute whereas the more viscous mucus of other phases of the cycle permit a speed of 0.25 or less millimeters per minute and under some conditions forms an impenetrable barrier.<sup>5</sup>

The change of reaction at mid-cycle from acid to alkaline is quite marked. Miller and Kurzrok<sup>13</sup> found a gradient of electric potential of 3 to 5 millivolts between the cervical mucus with a pH of 9.0 to 9.6 and semen with a pH of 7 to 8. Thus the spermatazoa are attracted to the cervix and oriented in their course rather than moving aimlessly in the vagina.

Moreover, the chemical content of cervical mucus at mid-cycle can best contribute to the nourishment of spermatazoa.<sup>1 4 5 14</sup> Besides mucin, cervical mucus contains appreciable amounts of certain amino acids, methylpentose, galactose and glucose. At ovulation time, the content of reducing substances in cervical mucus reaches a peak of 97 milligrams per cent. Thus a more easily metabolized source of calories is available to replenish those expended by motile sperm.

Finally, one of the marvelous adjustments of nature is the way in which the cervix conserves its metabolic activities keeping its secretion at a minimum except at ovulation time. The mucus secreted at other times is only enough to contribute to the normal moisture of the cervix and vagina although the mucin content of the glandular epithelium is a constant reservoir throughout the menstrual cycle.<sup>4</sup> Thus the resources for helping perpetuate the race are spared until they can be integrated at suitable times with similar functions of other pelvic organs.

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## DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

### MASTICATORY PERFORMANCE AND EFFICIENCY

THE MAIN GOAL of dental restoration is to improve the masticatory function of patients who have lost teeth.

With this statement of Manly and Braley<sup>1</sup> few will disagree. These authorities go on to set forth means of making these restorations, and to describe a bit of research.

Tooth structure is replaced wherever it has been destroyed; occlusal surfaces are carved to provide considerable contact with opposing teeth and to approximate ideal tooth form. The completed restorations are never ideal for their masticatory function and there are no data to prove that the ideal tooth form will provide best function. Investigators have been unable to agree as to which of several criteria should be used and have been puzzled by the wide variation in performance among persons having the same numbers and types of missing teeth.

The test should be selected from foods that are normally consumed. Any selective action that is performed by the normal and is missing from the deficient mouth should be taken into account. The method should be simple, rapid, and inexpensive. For preliminary tests, four foods were selected which seemed to be suitable from the standpoint of low cost and uniformity in size and hardness.

1. R. S. Manly & Louise C. Braley, Boston, in *Jl. Dental Research*, Aug.

salted peanuts, shredded cocoanut, carrots and raisins.

More than 100 half dentitions have been tested for masticatory performance; 25 of these were complete, 50 had third molars missing, and 25 lacked two molars (third and one other). In addition to these natural dentitions, 30 denture cases were studied. These groups differed considerably in their average masticatory performance. The amount of peanuts passing the 10-mesh screen after 20 chews is dependent largely on the number of molars present. When all are present the performance averaged 88 per cent. For persons having the first and second molar in occlusion, the average performance was 78 per cent. Those having only a first or second molar only 55 per cent, and denture wearers possessed still less ability in mastication.

There are wide variations in performances of individuals. Three persons with two molars in occlusion could not chew as well as some of the denture wearers. Masticatory efficiency is calculated in terms of the number of extra chewing strokes needed by the deficient person in order to achieve the same pulverization as the standard person. The masticatory performance was based on the percentage of masticated peanuts which would pass through a 10-mesh screen after being subjected to 20 masticatory strokes. Efficiency was calculated from the number of chews required to reach a desired degree of food pulverization. The performance was found to be independent of the size of mouthful as long as the number of chews was kept constant. The grinding was random in nature. As mastication proceeded, the process gradually became selective, the larger particles disappearing more rapidly than would be expected on the basis of random grinding.

The average performance of 25 cases with complete dentitions was 88 per cent. Fifty half dentitions lacking the third molar averaged 78 per cent; 25 half dentitions which possess two premolars and one molar in occlusion had a mean performance of 55 per cent, and 30 denture cases averaged 35 per cent. The efficiencies of the four groups are tentatively calculated to be 166, 100, 44 and 23 per cent, respectively.

## PUBLIC HEALTH

### REPORT ON THE 39th ANNUAL MEETING OF THE NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

By N. THOMAS ENNETT, M.D., Beaufort, N. C.

THE ASSOCIATION met at the Robert E. Lee Hotel, Winston-Salem, September 7th-9th inclusive. Dr. S. B. McPheeters, Wayne County Health Officer, president, presiding.



There were four general sessions, two section meetings of each session. The sections in the association are Health Officers', Nurses', Sanitarians', Laboratory Workers', Secretaries' section and Health Educators' section.

The Carteret Health Officer, Dr. N. T. Ennett, presented a paper before the Health Officers' section, the title being "Draw the Line Between Preventive Medicine and Therapeutic Medicine." This paper will appear in the *North Carolina Medical Journal*.

At one of the general meetings a panel discussion was held on the subject, "Public Health Service in North Carolina; What Needs Should It Serve?", Dr. Sylvester Green, executive vice-president of the North Carolina Medical Foundation, was moderator. Participating in the panel were the following editorial writers: Mr. A. G. Ivey, *Journal and Sentinel*, Winston-Salem; Mr. W. E. Hanner, *Sanford Herald*; Mr. H. W. Kendall, *The Daily News*, Greensboro; Mr. C. A. McKnight, *The News*, Charlotte; Mr. Dan Shoemaker, *The Citizen*, Asheville. This panel was a unique feature, the very first ever held by the association. It was a stimulating experience to have opinions of public health from such well-informed lay sources.

At the banquet Friday evening Governor Scott addressed the association. He stated that good roads, telephones and electricity were tied up with public health; that doctors would not locate in communities that did not have these facilities. He expressed great interest in the school health program, stating that he did all that he could in the last general assembly to enlarge the appropriation for public health. He also touched on the stream pollution problem, urging all present to urge their senators and representatives to do something at the next general assembly to remove this hazard to public health. The local health officer states that the coastal towns, such as Beaufort and Morehead City, should join Governor Scott in his campaign with the hope that the general assembly will not only do away with river or stream pollution, but will also do away with the sewer pollution of the bathing beaches of the coastal towns.

Dr. Reynolds, former State Health Officer, now living in California, set up an annual award known as "The Reynolds Award" to be made to the person in health work or to the health department doing especially meritorious health work. This year the award went to the Halifax County Health Department, Dr. R. F. Young, Health Officer, for unusually good work in Tuberculosis control. Governor Scott presented this award.

There were more than 600 health workers present at the meeting. The officers for the coming year are Mr. Harold F. Parker, Sanitarian, President, Winston-Salem; Dr. J. J. Wright, Chapel Hill,

Vice-President; Mrs. Workman, Charlotte, Secretary-Treasurer.

The association accepted an invitation from Winston-Salem to meet there again, with Robert E. Lee Hotel as headquarters, next year.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### ESTROGENIC TREATMENT OF ACNE VULGARIS

THERE is room for another treatment that promises benefit<sup>1</sup> in stubborn cases of acne vulgaris.

One to 2 grams of a water-soluble cream containing 2½ mgm. per gm. of sodium estrone sulfate\* was applied to the soap-washed skin two to four times daily. With improvement, applications were gradually reduced to one daily or e.o.d. Accessory treatment consisted of simple expression of comedones, drainage of cysts and pustules.

Subjects chosen had chronic severe acne; none of the cases had responded well to x-ray therapy, dietary control, local salves and lotions.

Iodized table salt was excluded specifically. Otherwise no dietary regimen was enforced. Patients were observed over a period of four months.

Number: 13 men; 17 women.

Aver. age: 22 yrs.

Aver. duration: 8 yrs.

Location: face, chest, back.

Previous therapy: alpine rays

Acne present: x-rays, diets, local astringents, comedones, papules, pustules

Previous health: good

Asso. diseases: none

Endocrine disturbances: none—before, during or after therapy

Laboratory findings: urine: sugar and albumin negative, b. p.: within normal limits, hemog.: 75 to 85%, B. M. R.: plus or minus 15%

Patch tests to ointment: negative 24, 48, 72 hours and 10 days.

During the first two weeks of local therapy no marked change, even flareups were noted. The The acneiform foreign body reaction—papules, pustules and cysts—evolved and involuted in four to six weeks.

Earliest noted effects were:

1. marked decrease in sebaceous gland activity
2. diminished number of new comedones
3. diminished number of pustules
4. acne areas became paler
5. affected areas felt supple and softer.

Within six weeks, improvement became firmly established; number of local applications was reduced one a day, or one e.o.d.

1. Irving Shapiro, Newark, in *Jl. Med. Soc. N. J.*, March.

After 16 weeks, 20 of the 30 patients reported a satisfactory clinical remission. The other 10 were divided as follows:

- 3—intense pruritus when ointment was applied
- 5—lapsed treatment
- 2—recurrences of acne suggested dietary or other etiology.

Remissions induced in two-thirds of the patients who were failures under classical management. Therefore a promising avenue is opened in the control of recalcitrant acne vulgaris.

78 Clinton Avenue.

\*Acknowledgement is given to Dr. George McKeown of Ayerst, MacKenna and Harrison, who supplied the special potencies of "Premarin" cream.

#### TREATMENT OF EARLY SYPHILIS WITH THREE INJECTIONS OF PENICILLIN AND WITH ONE INJECTION OF PENICILLIN

(R. D. Wright et al., in *Jl. Venereal Disease Information*, Sept.)

Patients with primary or secondary syphilis were carefully selected according to the following criteria: All patients were darkfield-positive (those diagnosed as secondary were darkfield-positive from secondary lesions); no patient had a history of previous syphilis; and no patient had received antisyphilitic or penicillin therapy for any condition within the three months preceding his antisyphilitic therapy.

The therapeutic results obtained when 97 patients who met the study criteria were treated with this three-day penicillin schedule were: Cumulative re-treatment rate was 11.5 per cent, which includes a probable reinfection rate of 8.6 per cent. No cases were considered to be clinical relapses. Two patients were re-treated for serologic failure, with a cumulative re-treatment rate of 2.8%.

The schedule appears to be a practical and satisfactory three-day ambulatory regimen.

A single injection of 300,000 units of procaine penicillin G in peanut oil containing 2 per cent of aluminum mono-stearate does not provide an optimum cure rate in early syphilis (123 cases, 51 per cent follow-up at the end of six months).

The schedule of 600,000 units daily for three days offers an effective and adaptable regimen for the ambulatory treatment of early syphilis (97 cases, 70 per cent follow-up at the end of six months).

#### HYPOLYCEMIA AND THE ISLANDS OF LANGERHANS

(H. A. Perkins et al., Boston, in *New Eng. Jl. of Med.*, Aug. 24th)

The most difficult problem in the differential diagnosis of spontaneous hypoglycemia is to distinguish between adenoma of the islands of Langerhans and functional hypoglycemia. The clinical picture is helpful but not diagnostic. Tolerance tests may be misleading.

The most important single differential point favoring the diagnosis of tumor is the occurrence of a blood sugar level below 50 mg. per 100 c.c. on prolonged fasting.

In doubtful cases failure to respond to a high-protein, low-carbohydrate diet is an indication for surgical exploration.

#### USE OF MILK TO CONTROL VOMITING CAUSED BY AUROMYCIN

(L. G. Bartholomew & D. R. Nichols, in *Proc. Staff Meet. Mayo Clinic*, June 21st)

Although aureomycin is readily absorbed after oral administration, the effectiveness and ease of this method of administration often is seriously impaired by the nausea

and vomiting produced by the aureomycin. Aluminum hydroxide gels, milk, and various alkalis have been administered simultaneously with the aureomycin in an attempt to prevent gastrointestinal irritation.

Recent studies have demonstrated that the absorption of aureomycin into the blood stream is impaired when aluminum hydroxide gel is so given.

Of the several methods we have tried, the administration of one glass of milk simultaneously with the aureomycin seemed most effective.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### THE TREATMENT OF OCCIPUT-POSTERIOR POSITIONS

THE DIAGNOSIS of occiput-posterior position commonly excites too much concern, and too many such patients are given too much meddlesome midwifery. Two New Orleans obstetricians<sup>1</sup> make a balanced presentation of the subject, the most of which follows.

First a few remarks about the diagnosis. Suspect posterior occiput when the small parts are found anterior. When the cervix is slow to dilate in spite of good uterine contractions, and when the patient complains of excessive pain in the first stage of labor, especially backache, the diagnosis is almost made. Usually, the head remains high during the first stage of labor, with rapid descent and rotation at the end of labor. A vaginal examination usually makes the diagnosis positive, but occasionally one must feel for an ear if the labor has been long and the head has developed a caput formation.

Most cases of occiput-posterior position will rotate and deliver as anteriors if left alone. The labor is likely to be longer than usual so sedation and supportive measures, such as intravenous fluids, may need to be freely given. Thus, in three-fourths of the cases, we treat the prolonged labor, and the rotation occurs spontaneously at the end of the first stage, or in the second stage. Sometimes a little assistance can be given by making gentle pressure against one side of the lambdoidal suture as the patient bears down. Manual rotation can in some cases be effected if there is room between the head and the pelvic walls for your fingers. In the average case, especially when there is a little disproportion, it is easier to use forceps.

The Scanzoni rotation—the original technic preferable—the head is rotated completely to the occiput-anterior position and brought downward before the removal and reapplication of the blades. Also, in order to prevent rotation of the head back to its original position, the left-hand blade (which is upside down) is wandered posteriorly, past the baby's face to the right side of the pelvis immediately after the right blade is removed. This

1. E. L. & J. A. King, New Orleans, in *New Orleans Med. & Surg. Jl.*, Sept.

usually takes only a few seconds. Generally, very little force is required for this maneuver, the weight of the handle of the forceps blade being sufficient to pivot the blade around one finger at its center. We use any type of forceps in this manner; while rotating the head it is essential for an assistant to rotate the baby's body.

We are not always successful in having the baby's head stay in the occiput-anterior position, although usually it does. In these cases we may either fasten an Allis clamp to the baby's scalp and make traction in the direction of rotation, after the head is rotated and during reapplication of the blades, or we may use two sets of forceps. As one blade is removed from the vagina upside down, the other blade from the second pair of forceps is put into position. Either of these methods is generally sufficient to prevent rotation of the head back to the occiput-posterior position.

The conditions of anesthesia, sterilization, etc., necessary for operative delivery must be provided. We prefer general or low spinal anesthesia, although this procedure can be done with a satisfactory local and pudendal block.

#### POSTPARTAL PSYCHOTIC REACTIONS

GRAVE MENTAL DISTURBANCE in labor and the puerperium occurs often enough to enlist interest on the part of all doctors in what Harris<sup>1</sup> says on the subject.

Childbirth serves as a precipitating event leading to psychotic reactions not unlike others occurring in the same age group. Of psychoses of the puerperium, manic-depressive constitute 40 per cent of the cases, schizophrenic and toxic exhaustive 20 and 28.5 per cent, respectively. Manic-depressive reactions come on one to two weeks postpartum. Loss of appetite may lead to malnourishment and dehydration. Suicide and infanticide constitute real dangers. Schizophrenic psychosis, manifesting itself in the puerperium, is more often than not an illness of slow development which was previously unrecognized, but now accelerated. Characteristic are a perplexed, preoccupied, apprehensive behavior with a suspicious distrustful attitude, and an air of uncertainty. Hallucinations are experienced, usually auditory, and sooner or later delusional ideas.

It cannot be determined during pregnancy which patients may develop a toxic exhaustive reaction. A proneness to such reactions on rare occasions may be known from a previous history of such a reaction to another trying circumstance. A history of a psychotic episode with a previous pregnancy makes it almost certain there will be a recurrence.

If uncertain as to whether certain observations indicate an impending psychosis ask for psychia-

tric consultation. Treat any infections or other physical complication and improve the general health. Put the patient in a private room and take adequate precautions against injury or suicide. Transfer the manic-depressive and schizophrenic patients to a psychiatric unit or hospital as early as possible; explain and reassure the patient even though she may object to it or may seem not to comprehend.

The prognosis for recovery in this whole group with psychotic reactions related to childbirth is favorable in 70 to 75 per cent, as practically all those with manic-depressive or toxic-exhaustive reactions recover. The recovery rate in the schizophrenic group is comparable, or only slightly better than to that of schizophrenic patients in general.

Antenatal care establishes a healthy attitude towards childbirth, the development of a sound maternal instinct, and removal of acute conflicts arising from the marital situation.

Women generally put great trust in their obstetrician and become to varying degrees emotionally dependent on him. He needs to be straightforward and truthful yet weigh carefully what he says lest he create some new doubt. He has a great opportunity to build up a warm human relationship with his patient, thus getting her off to a good start in motherhood making for much less trouble in subsequent health care of mother, infant and child.

#### DIGITOXIN OR DIGITALIS LEAF

(A. M. Goldman, New Orleans, in *New Orleans Medical & Surgical J.*, June)

In patients with auricular fibrillation the apical rate serving as a guide to proper dosage, the toxic state is rarely approached. Patients with sinus rhythm who have cardiac insufficiency are more difficult to follow especially in the face of a slow ventricular rate. This last group includes many of the Grade-IV congestive failures, who need more rigid management, rather than more digitoxin. It may be later shown that the daily maintenance dose of digitoxin lies somewhere between 0.1 mg. and 0.2 mg. and the size of existing tablets will have to be changed for the sake of simplicity and easier management of the less intelligent patient.

Many older patients are unable to taken even suboptimal doses of the leaf or digitoxin without becoming confused.

Included in any discussion of the desirability of a drug is the cost to the clinic patient. While 1.2 mg. sells for 14c, the price of 50 tablets of the leaf is \$1.00, that of 50 tablets of 0.2 mg. of digitoxin is \$2.00.

Where speed of action is not deemed necessary it remains to be demonstrated that digitoxin possesses advantage over the leaf preparations. In acute cardiac failure rapid digitalization by the oral or intravenous route seems indicated.

#### CARDIAC RHYTHM RESTORED BY QUINIDINE LACTATE

(V. J. Collins, New York City, in *Jl. Indiana Med. Assn.*, June)  
Arrhythmias occurring during cyclopropane anesthesia have been successfully treated by quinidine lactate intravenously, in dose of .1 to .2 gm. ECG tracings are reverted to normal in four to six minutes; the paradoxical tachycardia which usually follows the slowing of an auricular fibrillation disappears in the subsequent four minutes.

1. H. P. Harris, Jr., New Orleans, in *New Orleans Med. & Surg. J.*, Sept.

## PRESIDENT'S PAGE

THE STATE OF YOUTH is one of perpetual ambition and progress. Without the youth, the old would soon vanish away. The most invigorating association that one can have is the association with youth, vim, pep and vitality. Therefore, a double responsibility rests upon you, the younger members of the Tri-State Medical Association. First, you have to gain experience and comradeship with the other members, as well as experience in writing and speaking what you have seen and experienced in your professional lives. Second, you must keep alive and active those older members who have for so many years carried the banner, but who now, without your enthusiasm, interest and support, may fail to attend the meetings regularly and read or discuss scientific papers. From the research standpoint, particularly, we are looking to you to keep us abreast of the times, for your recent opportunities in institutional research have been far superior to ours.

The science of medicine, you have mastered well. The art of medicine, you will master as time goes on and you mix and mingle with the older members of the profession. You can see, therefore, that we are just as dependent upon you, with your enthusiasm, courage and scientific knowledge, as you are dependent upon us for leadership, encouragement and the knowledge of the art of medicine. Let the old and the young realize that the Tri-State Medical Association appreciates, honors and respects every member, regardless of his age, his specialty, or his lack of a specialty. For each in his own way has a great contribution to make if he is to get the full and complete benefit of a membership in a grand old association, founded, maintained and supported by the best genuine doctors in the Carolinas and Virginia.

—R. B. DAVIS.



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## THE THYROID AND MENSTRUAL BLEEDING

THYROID MEDICATION is much more acceptable to the patient, much less costly, and when indicated, much more effective than an extended and expensive series of injections of one or other of the hormone preparations.

That's the way a general practitioner<sup>1</sup> proclaims it. No ifs and buts, no deferring to what Professor This or Specialist That "thinks." Plain statement of what he knows.

Of 50 cases of excessive bleeding treated with desiccated thyroid, two failed to improve, two others improved, and 46 resumed periods with normal flow. Of 45 patients whose chief complaints were of irregularity of menstrual cycles, two failed to respond to thyroid, two improved, and 41 became regular. Correction of concomitant fatigue, large sleep requirement, nervousness, irritability, poor appetite, and underweight was noted.

Thyroid therapy in many cases obviates curettage or hysterectomy, especially in young women, based on the "exclusion diagnosis" of uterine fibrosis or functional hyperplasia of the endometrium.

Inadequate level of thyroid activity often develops following pregnancy, especially if two or more pregnancies have occurred in quick succession. Frequently this deficiency, due to exhaustion of the thyroid gland, is first called to the patient's attention by excessive uterine bleeding, headache and lassitude, which last two are erroneously attributed to the resultant anemia and to the postpartum state.

The headache is severe, increasing to throbbing with exertion, and is unrelieved by the usual analgesics. Stilbestrol, 0.5 mg. once or twice a day, gives relief in most cases in an hour or two.

The bleeding may be of a flooding nature so profuse as to soak through double perineal protection in less than one hour and even suggest the possibility of abortion. Of this symptom, also, stilbestrol may control within a short time.

Stilbestrol has no effect on this tiredness which occurs all through the menstrual cycle.

The level of adiposity is consistent only in being usually *abnormal*—either too great or too little, obesity or nervous slenderness.

The multitudinous vague, annoying, but not disabling symptoms of hypothyroidism occur singly, or in any combination—intractability of the hair, coarsening and dryness of the skin, sensitivity to cold, brittleness of the nails. Frequently the BMR is within the lower limits of the "normal" range, but the response to thyroid therapy indicates that it is below the level best for that patient.

1. *The Milwaukee Medical Times*, Sept.

## MANAGEMENT OF THE NEUROTIC PATIENT

THE NEUROTIC PATIENT is a troubled person, says MacPherson.<sup>1</sup> Well, maybe so; and all will admit that he or she is a troublesome person.

This doctor goes on to tell in some particular how to get at the bottom of the patient's trouble.

In a psychiatric interview no attempt is made to ask specific questions. An hour is allotted to each interview in order that the patient may realize that the doctor's attention is completely at his disposal, for sufficient time to encourage conversation.

The patient is asked to give his own version of what the trouble may be and any facts about himself or the situation that seem to be reasons for it. The verbal expression of thoughts, fears and beliefs gives them tangible definition. There is relief in getting the trouble into objective form. It is essential to distinguish whether the patient is healthy-minded and dealing with an unusual and trying situation, or is unstable and in difficulty because of a fundamental lack which makes him unable to deal with ordinary life situations.

Therapy has one of two general purposes. The first is supportive, indicating ways of tolerating the facts and stimulating courage to deal with the difficulties by reassurance, suggestion, inspiration, persuasion. The confidence, optimism and authority of the physician play an active role in such an approach. The second is change of fundamental habits that have controlled behavior. To have a habit cease, it is essential to realize that the initial purpose was falsely conceived, or that it is no longer valid, or useful to the mature personality. In therapy one attempts to learn the conditions determining the origin of habits and the possible errors involved.

To cooperate the patient must have a capacity for introspection, intelligence, the ability to tolerate painful revelations about instinctive motivation and sufficient mental distress to sustain a strong desire to change his way of life. Explanations usually are found in the life of the child, who supplied answers to his ignorance from his own imagination, establishing fantastic convictions about himself and what to expect in life.

However reluctantly, the opinion, "Thought has power to make things so," must be abandoned in favor of, "Thought is a tool to register what is so." It is also necessary to relinquish the idea that analogy is equivalent to identity, if there is to be any logical thinking. If the child does not learn that it can stand mental pain, it will fail to learn that it can tolerate not having what it wants. This leads to a stubborn tenacity about having its own way or, in reverse, a rejection of having any way of its own, because of the threat of possible frustration.

1. D. J. MacPherson, Boston, in *New Eng. Jour. of Med.*, Sept. 14th.

Partial intuitive recognition of dependency may be expressed in self-depreciation, feelings of inferiority and insecurity or active rebellion at any attempt to supply the guidance that is sought. Reassurance is sought but rarely believed; criticism and blame are expected but resented. When, as child and adolescent, one has experienced so much spontaneous hostility in reaction to the frustrations and discipline imposed by socializing forces, it is quite understandable that hostility is expected in return. But there have also been experiences of being loved and taken care of, with a desire to reciprocate in kind—hence confusion and need to understand and find some solution for the ambivalence of emotions occurring in many relations.

The problems resulting from sexual instinct in the infant and child are quite different from those of the adult but demand solution, and the nature of the solution influences later development. In adolescence strong emotional and physical sexual interest is aroused, and if the early training has been too rigid, the defenses and controls established in relation to sensual pleasure and curiosity may be reactivated; if it has been too lenient the need for control may be overwhelming in its urgency. In either event unintelligent early training may result in serious conflict and disturbances of behavior at this period.

## OBESITY

A HARD-HEADED SCOT<sup>1</sup> has written far the best article on obesity that has come to this desk. Learn from this condensation how to do more for your obese patients than you or any consultant has ever been able to do.

Obesity here means weight more than 10 per cent above the average for an individual's height, age, sex, and race. Statistics clearly show that obese people are prone, more than the average, to diabetes mellitus, hypertension, angina of effort, obstetric accidents (including foetal deaths and toxæmia of pregnancy), gallstones, arthritis, abdominal hernia, varicose veins and venous thrombosis, bronchitis, arteriosclerosis, accidents and surgical post-operative complications. For a man to be 25 lbs. overweight at 45 carries with it a 25 per cent reduction in life expectancy, while a man 50 lbs. overweight at that age has the same life expectancy as the average for all forms of valvular heart disease.

To many it will come as a surprise to learn that obesity is a disease of poverty rather than of riches, that, with the possible exception of hypochromic anaemia due to deficiency of iron, it is the most frequent and serious nutritional disorder in Great Britain.

Overeating may have both a physical and psych-

1. A. P. Meiklejohn, in *Edinburgh Med. J.*, June, 1950.

ological basis. On the physical side, it is probable that appetite is normally controlled by the hypothalamus, which organ may be responsible for an increase of appetite in pregnancy; gains in weight following pregnancy may be due to failure of this mechanism to return to normal. Many women over-eat for emotional reasons; perhaps some women eat too much because they want to be pregnant and so attempt to capture the satisfying sense of fullness of pregnancy. Perhaps others don't want to be pregnant, and therefore seek a layer of fat, to discourage the advances of the opposite sex. It is sufficient to know that many women over-eat because they are unhappy..

The poor must depend on cheap foods, high in carbohydrate and lacking satiety value, while the rich can allay the pangs of hunger by foods high in fat and protein that linger longer in the stomach. For some individuals, the requirement for calories is remarkably small, diminishes with advancing age, without corresponding reduction in eating habits, with the result that obesity develops. But, in many cases of obesity, the essential cause is probably some fundamental metabolic change.

Grafe's (1933) concept of "luxus konsumption" postulated that the body has normally some power of burning up the surplus calories in the diet. It is natural corollary to suppose that, in obesity, this power is lost. It is a remarkable fact that most people continue, year after year, at the same body weight, without any great attention to what they eat. To drink an extra glass of milk each day for a year would put on 24 lbs.—if every surplus calorie were conserved. It is difficult to conceive that appetite is the sole factor that keeps the weight of the normal individual so remarkably constant. Many obese people consume a great excess of calories, others eat extraordinarily little. A certain number of obese women maintain, or even increase, their stores of fat on a caloric intake that would be insufficient, for most people, to maintain their basal metabolism on 24 hours of bed rest.

There is a widespread idea in the profession that obesity is frequently the result of an endocrine disorder. This belief originates in teaching of a generation ago when it was thought that Fröhlich's syndrome was the result of diminished activity of the anterior pituitary. It is evident now that the essential lesion in this syndrome lies in the hypothalamus, as Fröhlich himself suspected. This is not the case in the large number of fat, sexually-retarded children who develop to a normal maturity. Failure of the anterior pituitary, in its classic form, is to be seen in Simmond's disease, which is sometimes associated with extreme cachexia rather than obesity. Another common error is to believe that the thyroid is at fault. Cases of Graves' disease are certainly usually thin, but the reverse is not

true: obesity is no essential feature of myxedema. Thyroid tablets certainly have a place in the treatment of obesity, but they should usually be given with the deliberate intention of stoking the fires of the body rather than of making good a glandular deficiency of which there is no evidence.

Many first seek advice because of diabetes, thirst, polyuria or pruritus vulvae; in many obese patients the disease is curable, if only they can be reduced in weight. Insulin only makes them fatter; once their weight is brought down on a sub-caloric diet complete relief of the disorder is usual.

Even the best physicians see only what they look for. Too often patients are diagnosed as having diabetes, hypertension, cholecystitis, bronchitis and so on, without any notice being taken of whether they are overweight. The administration of insulin to obese diabetics, "without first finding out if their glycosuria can be relieved by simple dietary restriction, is malpraxis; it usually increases their appetite, adds to their weight and in the long run, intensifies their trouble."

The good physician should be constantly on the lookout for obesity, particularly in cases of conditions more frequent in obese than in normal subjects. Reduction in weight will often go a long way towards relieving their symptoms. In hypertension, although weight reduction does not usually result in any marked fall of b. p., the lowering of the excessive metabolism characteristic of obesity relieves the strain on heart and blood vessels with consequent great benefit to the patient.

It is the first duty of the physician to persuade the patient that obesity is unnatural, that it impairs health and is due to eating more food than the body really needs. Fat does not come out of the air; it comes off the plate.

The obese housewife will usually do well on a diet providing 1,000 calories; e.g., 100 gm. carbohydrate, 70 gm. protein and 36 gm. fat. An obese man in active work should lose weight on 1,500 calories, with no deficiencies of vitamins and other specific nutrients. There are no good grounds for limiting the protein intake of hypertensive patients, so long as they show no evidence of renal failure and N retention.

The printed sheet rarely conforms to the dietary habits of the individual; only by repeated interviews can the necessary adjustments be made and the patient brought to persevere with the treatment.

Dietary restriction in obesity should never be attempted in the early case of ulcerative colitis and should be used with caution in pulmonary tuberculosis, but in cases of peptic ulcer or malignant disease awaiting surgical intervention nothing but benefit is likely to follow some loss of weight by dietary means.



In case water adds to the weight, mersalyl, or ammonium chloride by mouth, for a few days, with salt restriction, may be valuable as a temporary expedient, particularly in persuading the patient that a reduction in weight is possible.

Sometimes helpful for restricting appetite is amphetamine sulphate, 5 mgms. one hour before each main meal. This is a vasoconstrictive drug and should not be given to patients with coronary disease or other evidence of vascular occlusion. It should be used with caution in hypertensive patients.

Dried thyroid gland by mouth still has a place in obesity responding poorly to dietary measures, but not with any intention of correcting a non-existent endocrine disorder.

Exercise, massage, Turkish baths, special corsets and other restrictive machinery, and colonic lavage may amuse the patient who can afford them, but no ultimate benefit results.

#### THE PRACTICAL NURSE AN INSTITUTION OF RECOGNIZED IMPORTANCE

SOME of us remember Dr. Joseph Price, of Philadelphia, and his saying all he wanted in a nurse was "an average mind, a strong back and a tender heart." Those words are worth considering now. Not 10 per cent of us can pay for medical care on the principle that every case of illness of any consequence must be treated in a hospital bed, with the help of three registered nurses.

The article to be abstracted<sup>1</sup> indicates that in Milwaukee and in some of our Eastern States a great many practical nurses are being graduated and are filling satisfactorily a great need in the care of the sick.

If you see a woman wearing a cocoa brown uniform and a brown striped cap working in one of Milwaukee's hospitals, you are looking at a trained practical nurse, a graduate of the one-year course conducted by the School for Nursing at the Vocational School.

If the woman you see is wearing the brown uniform without the brown striped cap, she is a student in the trained practical nursing course. You will probably see a number of such women in the hospitals because the course emphasizes greatly actual experience in the hospital. Of the course's 49 weeks of work only nine are spent in the classrooms; the other 40 weeks at 15 institutions affiliated for the giving of the course of training for these students.

The school starts a new class of 20 students every 10 weeks. There are five classes a year. In this way, the course places in the hospital a constant supply of student practical nurses who work while they learn. Fourteen of the affiliates pay the students \$18 per week while they are on-the-job-

learning. The fifteenth, the Visiting Nurse Association, does not pay the student while she is learning.

In the nine weeks at the Vocational School classrooms the students learn housekeeping in the apartment and laundry, elementary nursing in the 10-bed nursing laboratory, and about foods and cooking in a home economics classroom. They spend 12 hours at three hospitals for preliminary experience, then go out to the affiliated institutions for experience with patients while being taught by the floor supervisors. Each girl goes to eight different institutions, spending five weeks learning each of the following: care of the aged, care of the chronically ill, care of the children, care of the mental patient, care of the convalescent patient, care of mothers and infants, care of the tuberculous patient, and nursing in the home.

The 15 affiliated institutions include eight General Hospitals, two Homes for the Aged, one Hospital for the Chronic Insane, one Sanitarium for the Tuberculous, one Convalescent Home, one Home for Dependent Children and one Children's Hospital.

The School for Practical Nurses has a check sheet listing 72 things it teaches the women. Some of them are: how to make six different kinds of sick beds; taking care of bed rooms, utility rooms, linen rooms; how to give four kinds of baths; charting; collecting specimens; feeding a patient; giving enemas; preparation of a mustard plaster, a stupe, steam inhalation; preparing a patient for surgery, testing urine for sugar, insulin administration, how to attend a patient receiving an intravenous injection, sitting with anesthetic patient; helping a patient into a wheel chair, helping a patient walk, with or without crutches; handling sterile articles.

The fact that students can earn something over \$700 while going through the course has attracted many older women who make excellent practical nurses, but who could not otherwise afford to take the time to go through the year's training.

Most of us will be surprised to learn that in the Eastern States some of the training schools for practical nurses have operated successfully for 20 years.

There is no mention of the fees charged in the city made famous by Schlitz. Here in Charlotte quotations are not enough below those of registered nurses to materially lessen the cost of medical care to the patients of doctors who do not trust a mother, or anybody else without the "nurse" label, to give a pill to a patient.

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FOR SALE—Cambridge Hindle All-electric Mobile Electrocardiograph-stethograph, \$800.00. Business Manager, Medical College of South Carolina, Charleston.



## NEWS

### SPECIAL COURSES AT THE MEDICAL COLLEGE OF VIRGINIA

#### I. ELECTROCARDIOGRAPHY

October 23rd-27th

#### II. CARDIOLOGY

October 30th-November 3rd

All lectures will be held in the Baruch Auditorium from 10:00 A. M. to 4:00 P. M. daily.

In general Course I will consist of a discussion of electrocardiography with the reading of significant electrocardiograms, and Course II will be a broad presentation of heart disease from the anatomical, pathological, and clinical standpoints. Participating members of the faculty will be Drs. F. L. Apperly, I. A. Bigger, Nathan Bloom, P. D. Camp, Erling S. Hegre, F. B. Mandeville, Howard McCue, Reno R. Porter, William B. Porter, Wellford C. Reed, Charles E. Troland, Armistead D. Williams, and others.

The fee for the two weeks will be \$50.00 or \$25.00 a week.

Detailed programs may be obtained from the undersigned. Please address all correspondence and make out checks to the Department of Continuation Education, Medical College of Virginia.

KINLOCH NELSON, M.D.,  
Director, Continuation Education.

### NEW OFFICERS SCOTLAND COUNTY HOSPITAL

Dr. Roscoe McMillan, of Red Springs, Robeson County, has been chosen Chief-of-Staff of the new Scotland County Memorial Hospital for 1950-1951. Other officers of the hospital are Dr. Fred Ford, Maxton, vice chief-of-staff, and Dr. L. E. Nesmith, Laurinburg, secretary.

Dr. McMillan, who has practiced medicine in and around Red Springs for 40 years, is a long-time friend of the Scotland hospital and his appointment is a very popular one.

Dr. McMillan has been for years Secretary-Treasurer, and now is President-Elect of the Medical Society of North Carolina. He has been chosen the North Carolina doctor of the year and is a candidate for American doctor of the year at the upcoming A. M. A.

The following is a complete listing of the hospital staff committees and membership for the new year: Executive—Dr. Roscoe McMillan, Dr. Fred Ford, and Dr. L. E. Nesmith; Program—Dr. Gus Forbes, and Dr. George Creed; Credentials—Dr. R. D. Croom and Dr. Simmons Patterson; Records—Dr. W. R. Griffin; Representatives to Board of Trustees—Dr. J. J. Richardson and Dr. H. H. Summerlin; and Advisory Board to Nursing Staff—Dr. L. L. Packard, Dr. Ed Womble, and Dr. C. T. Johnson.

### NORTH CAROLINA ORTHOPEDISTS

Dr. Harry Winkler, of Charlotte, was elected president of the North Carolina Orthopedic Association at a meeting at Asheville October 1st, and plans were virtually completed for the formation of a Southeastern Orthopedic Association.

Other officers elected at the final meeting of the two-day session include Dr. George Holmes of Winston-Salem, vice-president, and Dr. E. Toxler, of Greensboro, secretary-treasurer.

The proposed new Southeastern Orthopedic Association would comprise associations in North Carolina and South Carolina, Georgia and possibly Florida.

Dr. C. E. Erwin, medical director and chief surgeon for the Georgia Warm Springs Foundation for Infantile Pa-

ralysis, was principal speaker. His subject was "Hip Surgery."

### UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE

Dr. Albert A. Fisk has joined the Faculty as Assistant Professor of Biochemistry. Dr. Fisk is a graduate of Harvard College and the School of Medicine, Yale University, where he held the Junior Brown Fellowship in Pathology. In 1948-1949, he was American Cancer Society Fellow at the Massachusetts Institute of Technology and, during the past year, he has been engaged on studies in protein chemistry under Dr. Linus Pauling at the California Institute of Technology.

Dr. Grover C. Pitts has been appointed Assistant Professor of Physiology. Dr. Pitts received his Ph.D. at Harvard University in 1943 and has been with the Harvard Fatigue Laboratory and the Naval Medical Research Institute.

Construction has been started on an addition which will provide additional laboratory space for the Departments of Biochemistry, Pharmacology, Physiology, Pathology, Microbiology, Internal Medicine and Surgery, as well as new animal quarters, classrooms and an auditorium to seat 240. The total project, including equipment, will cost \$950,000. Construction of a unit for cancer teaching and research, costing \$250,000, is also under way.

Dr. Dudley C. Smith, Professor of Dermatology and Syphilology, died on August 30th.

Dr. Gary N. Moon, Instructor in Otolaryngology, has been granted a leave of absence for military service.

The following grants from the National Institute of Health have been recently received: \$24,829 for cancer teaching; \$4,968 for studies on the effects of hyaluronidase upon the course of tuberculosis in rabbits treated with streptomycin, under Drs. J. R. Cash and S. W. Britton; \$2,592 for studies on trace elements in human blood, under Dr. B. S. Leavell; \$9,093 for studies on the effect of CNS depressants on metabolism, under Dr. C. L. Gemmill; \$17,500 for the training program in psychiatry, under Dr. D. C. Wilson.

THE CARTARET COUNTY MEDICAL SOCIETY held its regular monthly meeting at the Morehead City Hospital September 11th, a dinner meeting, the hospital acting as host, Dr. S. W. Hatcher, president, presiding.

Instructive cases were reported by Drs. Theodore Salter, F. E. Hyde and M. B. Morey.

After discussion it was decided to ask the University of North Carolina to hold one of its postgraduate courses in New Bern some time in the fall. The matter of the blood bank to be organized in conjunction with the American Red Cross, being promoted by the New Bern Red Cross Chapter with other local Chapters participating, was further discussed.

N. THOMAS ENNETT, M.D., Cor. Sec.

The members of the CATAWBA VALLEY (N. C.) MEDICAL SOCIETY were guests of the Hickory doctors Tuesday, Sept. 12th, at 6:30 p. m. at the Hickory Drive-In Restaurant, on U. S. Highway 70, south of Hickory.

Features of the program were:

1. Blood Levels of the Hormone Progesterone, by Dr. Charles Hooker, Professor of Anatomy, University of North Carolina Medical School.

2. Case report of Chronic Gout, by Dr. Dan Stewart, Hickory.

3. Case report on an Unusual Malignancy of an Undescended Testicle, by Dr. J. D. Whaley, Hickory.

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## DR. BIGGER'S PORTRAIT PRESENTED

Ceremonies honoring Dr. I. A. Bigger, Professor and Head of the Department of Surgery and Surgeon-in-Chief at the Medical College of Virginia, held in September, included presentation of his portrait to the college. Painted from life by Charles Hopkinson, of Manchester, Mass., the portrait is a gift of Dr. Bigger's former students at MCV. A surgical clinic was held by Dr. Bigger for his former students, all of whom are practicing surgeons. The ceremonies were followed by a banquet at the Commonwealth Club, at which Dr. Charles Nelson was toastmaster.

Dr. M. PIERCE RUCKER has been elected chairman of the Richmond, Va., Board of Health to succeed Dr. B. H. Martin, resigned. A new member of the board is Dr. Harry J. Warthen.

Dr. C. L. STUCKEY, Charlotte internist, held open house on Friday, October 6th, from four until eight, in his new offices, 1515 Elizabeth Avenue.

## DIED

Dr. Henry Martin Sneed, 65, died October 7th at his home at Columbia, Va., after an illness of several months. He practiced for 43 years, 15 at South Hill, Mecklenburg County, and 20 at Petersburg. In the past few years he had been Health Officer for Powhatan, Cumberland, Amelia, Goochland, Louisa and Fluvanna Counties.

Dr. Sneed was a native of Fluvanna County, and was graduated from Medical College of Virginia in 1907. He served as president of the Petersburg Medical Faculty and was a member of the Fourth District Medical Society and the Medical Society of Virginia.

Miss Mary Carter Nelson, 93, one of the first group of 20 nurses to enlist in the Navy Nurse Corps, died September 15th at the home of her sister, Mrs. Rosewell Page, in Hanover County, Va. She was graduated in the 1894 class of the Johns Hopkins Hospital Training School for Nurses and served as a nurse in the Army during the Spanish-American War.

Miss Nelson was born in Shanghai, the daughter of the late Robert Nelson, D.D., and Episcopal missionary to China, and educated in Shanghai and the States. In 1877 she was named to head a girls' mission school in China, which position she held until 1881.

Following the Spanish-American War she was active in public health and anti-tuberculosis work in a number of States, and in 1917 she went to France with the Rockefeller Tuberculosis Commission, later becoming a director of a School for Refugee Children.

Dr. Stanmore W. Talbert, 56, died at his home in Columbia, S. C., on August 27th, after an illness of six months.

A native of Columbia, Dr. Talbert was a graduate of the University of South Carolina and of the University of Georgia School of Medicine (1921). Following a year of internship he returned to Columbia where he engaged in general practice up to the time of his last illness. He was a member of the visiting staff of the Columbia and Providence Hospitals.

Dr. Alva S. Pack, 62, died at his home in Greenville, S. C., September 5th. He was reared in Greenville, graduated from the Medical College of South Carolina (1911), located in his home town and practiced medicine and surgery until his retirement in 1948.

## BOOKS

PRINCIPLES OF INTERNAL MEDICINE, by T. R. HARRISON, Editor-in-Chief. *The Blakiston Company*, 1012 Walnut St., Philadelphia 5, Pa. 1950. \$12.00.

This book is the product of the collaboration of more than half a hundred eminent specialists in clinical and laboratory medicine. The preface tells us that it represents an attempt to integrate the pertinent content of the preclinical sciences with clinical medicine and to approach the subject both from the standpoint of disorders of structure and by way of abnormal physiology, chemistry and psychology.

The arrangement is not that of the orthodox medical text. First is offered an introduction entitled Approach to the Patient. Part I, Cardinal Manifestations of Disease, includes discussions of the major symptoms and signs, and the manifestations of circulatory failure, renal failure and anemia, and the mechanisms whereby these develop. Part II, Physiologic Considerations, treats of certain principles essential to the understanding of the problems of internal medicine. These are discussed more at length than some will consider necessary, but it is the opinion of the authors that a realization of the importance of much of what now appears but remotely connected with clinical medi-

cine, will be revealed as of great importance in the future. Part III considers elaborately Reactions to Stress and to Antigenic Substances; Part IV, metabolic and Endocrine Disorders. Other parts are captioned Disorders Due to Chemical and Physical Agents, Diseases Due to Biological Agents, Diseases of Organ Systems.

Attention is called to the fact that a large number of individuals, in addition to the the editors and authors, have contributed invaluable service as critics and otherwise. Even without this assurance, one would run no risk in accepting this volume as a book without a superior in the field of internal medicine.

AN ATLAS OF HUMAN ANATOMY, by BARRY J. ANSON, Ph.D., Professor of Anatomy, Northwestern University Medical School. 518 pages. *W. B. Saunders Company*, Philadelphia and London. 1950. \$11.50.

The author has prepared an atlas of gross anatomy the pictorial content of which is based upon new dissections serially prepared and upon variable features statistically presented. It was prepared in the belief that such an atlas would be of service to students and to practitioners, comparable to service obtainable from the use of actual specimens. The illustrations are prepared by talented artists. The English is a delight to read—which cannot be said for more than five per cent of the medical books being published in our present time. The book will



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be worth far more than its price to any doctor who will purchase a copy and use it.

**MANUAL OF CLINICAL LABORATORY METHODS**, by OPAL E. HEPPLER, Ph.D., M.D., Associate Professor of Pathology, Northwestern University Medical School; with a foreword by JAMES P. SIMONDS, Ph.D., M.D. Fourth edition, second printing. *Charles C. Thomas*, 301-327 E. Lawrence Ave., Springfield, Ill. 1950. \$8.50.

This book is made up of matter prepared for use in the teaching of medical students and laboratory technicians. Since it is not designed as a textbook of clinical pathology, it does not discuss, except incidentally, the clinical significance of the results of the tests. All of the essential examinations are included, and in the cases in which a great number of tests have been devised for meeting one certain diagnostic end, only the test regarded by the author as best is described, with in some instances one or two other tests as supplemental, or applicable in the few cases in which the test considered best if for some reason can not be applied.

The techniques of the different tests are clearly described without wasting a word. Sources of error in the making or reading of certain tests are listed. In this particular the book under review is far more satisfactory than the general run of such books. Where colored illustrations are needed for best teaching, color is used. On the whole the book may be recommended without reservation for the

use of physicians and laboratory technicians, those still undergoing training and those who have been in practice for a number of years, who realize the need for learning the most recent developments in this field.

**THORACIC SURGERY**, by RICHARD H. SWEET, M.D., Associate Clinical Professor of Surgery, Harvard University Medical School; Illustrations by JORGE RODRIGUEZ ARROYO, M.D., Assistant in Surgical Therapeutics, University of Mexico Medical School. 345 pages with 155 illustrations. *W. B. Saunders Company*, W. Washington Sq., Philadelphia and London. 1950. \$10.00.

Perhaps the surgery of no other part, not even excepting that of the brain, has been so expanded in recent years as has surgery of the thorax. The preface tells us that this volume is based on the concept that any properly qualified surgeon can readily acquire satisfactory proficiency in thoracic surgery by employing the techniques herein described. This statement prejudices this reviewer in favor of the volume. Too many books on various narrow specialties proclaim over and over that no one should undertake any but the simplest maneuvers in this or that narrow field, unless he has had long training and great experience in it; which boils down to saying the patient should be sent "to me or some other of a very small, but," in the opinion of the writer, "very select and august group."

So far as this reviewer may undertake to judge, the text carries out the promise of the preface in supplying instruction which when put into practice will constitute good thoracic surgery.

**PATHOLOGIC PHYSIOLOGY: Mechanisms of Disease**, edited by WILLIAM A. SODEMAN, M.D., F.A.C.P. The Wm. Henderson Professor of the Prevention of Tropical and Semi-Tropical Diseases, Tulane University of Louisiana School of Medicine; Senior Visiting Physician, Charity Hospital of Louisiana; Consultant in Medicine, U. S. Marine Hospital at New Orleans. 808 pages with 146 figures and 30 tables. *W. B. Saunders Company*, W. Washington Sq., Philadelphia and London. 1950. \$11.50.

This volume results from collaboration of 25 physicians and surgeons, each of whom is in a specially favorable position to have something valuable to contribute. The book is not arranged in the standardized form—etiology, pathology, symptoms and treatment: it analyzes symptoms and signs and the mechanism of their development. It is not intended to take the place of standard texts of physiology or of medicine. Its aim is to bridge the gap between these texts by presenting a clinical picture of disease seen as physiologic dysfunction. Use of the book in the way recommended by its makers cannot fail to enlarge a doctor's understanding of disease and his usefulness to his patient.

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**A TEXT-BOOK OF X-RAY DIAGNOSIS**, by British Authors in Four Volumes. Edited by S. COCHRANE SHANKS, M.D., F.R.C.P., F.F.R., Director, X-Ray Diagnostic Department, University College Hospital, London; and PETER



KERLE, M.D., F.R.C.P., F.F.R., D.M.R.E., Director, X-Ray Department, Westminster Hospital; Radiologist, Royal Chest Hospital, London. Volume III. 830 pages with 694 illustrations. W. B. Saunders Company, Philadelphia and London. 1950. \$18.00.

That x-ray diagnosis of abdominal disease conditions presents unusual difficulty is generally recognized. But the usefulness of these rays in abdominal diagnosis have been vastly extended in the 48 years since Sir James M. Davidson said, "with the exception of gaseous distention of the stomach, renal calculi, and metallic foreign bodies, which can be detected, little information can be obtained." The volume describes means of using the x-rays in the diagnosis of disease conditions all the way from the salivary glands to the anus. It has special sections on the antenatal studies of the fetus, the obstetric pelvis and the study of fetal-pelvic proportions and relationships, the radiology of the soft tissues and the placenta, and on the urinary tract in pregnancy. Part V is devoted to gynecological radiology and part VI to radiology of the urinary tract.

The whole is an exhaustive exposition of the subject, having few if any peers. It is such knowledge as is here portrayed that has made of the roentgenologist the most useful and the most popular among medical consultants.

PRINCIPLES AND PRACTICE OF SURGERY, by JACOB K. BERMAN, A.B., M.D., F.A.C.S., Associate Professor of Surgery, Indiana University School of Medicine; Associate Professor of Oral Surgery, Indiana University School of Medicine; Associate Professor of Oral Surgery, Indiana University School of Dentistry, with 429 illustrations. *The C. V. Mosby Company*, 3207 Washington Boulevard, St. Louis 3, Mo. 1950. \$15.00.

It is rare nowadays to see a book with the title "Principles and Practice . . . ." More than the usual attention is given to embryology and to gross and minute anatomy. Applied physiology and biochemistry find proper place. Correlation of the basic sciences as a fundamental principle to surgery is presented as the foundation on which is erected the structure of clinical surgery. At the risk of seeming dogmatic, definite courses are charted for the sake of being explicit, "the student being spared the ordeal of drifting aimlessly among the waves of conflicting opinion." The foregoing sentence alone affords sufficient evidence of the worth of the book. No surgeon with so sound an understanding of how to teach could possibly be a poor teacher, by word of mouth or by the written word. The remainder of the book bears out this promise.

ACUTE HEAD INJURIES, by JOSEPH P. EVANS, M.D., Ph.D., Associate Professor of Surgery, Director, Division of Neurological Surgery, University of Cincinnati College of Medicine, Cincinnati. *Charles C. Thomas*, 301-327 E. Lawrence Ave., Springfield, Ill. 1950. \$2.25.

This booklet of 100 pages can serve a very useful purpose, particularly as a source of information on emergency measures, to be applied especially to heads injured to various degrees in automobile accidents.

FREUD: DICTIONARY OF PSYCHOANALYSIS, edited by NANDOR FODOR, Associate of the Association for the Advancement of Psychotherapy, and FRANK GAYNOR, Co-author of the "Dictionary of Industrial Psychology"; with a preface by THEODOR REIK, Author of "Listening With the Third Ear." Philosophical Library, 15 East 40th St., New York 16. 1950. \$3.75.

Says the author: "Here for the first time, filling a need urgently felt by specialist and layman alike, is a complete glossary of all the basic terms in psychoanalysis as defined and explained in the words of Dr. Sigmund Freud, founder of the school of psychoanalysis."

This reviewer has undertaken to understand a number of the definitions given in this dictionary. Little success has attended the effort.

ESSENTIALS OF OPHTHALMOLOGY, ROLAND I. PRITIKIN, M.D., F.A.C.S., F.I.C.S., Eye Surgeon, Rockford Memorial, Winnebago County and Swedish-American Hospitals. 215 illustrations, including 18 subjects in colors. *J. B. Lippincott Company*, E. Washington Square, Philadelphia. 1950. \$7.50.

The author's aim is to present a broad but practical view of the whole field of ophthalmology. The needs of the physician in general practice have been kept steadily in mind. There is a pertinent chapter on industrial ophthalmology. The discussion of treatment of the various diseases is restricted largely to procedures readily carried out in the office.

SURGERY OF THE EYE—INJURIES, by ALSTON CALLAHAN, B.A., M.S. (Ophth.), M.D., F.A.C.S., Professor of Ophthalmology, Medical College of Alabama. *Charles C. Thomas*, 30-327 East Lawrence Ave., Springfield, Ill. 1950. \$11.50.

This book represents experiences gained in the study of 3,000 cases of injuries of the eye and adnexa in an army ophthalmic center, where different methods could be applied to similar cases and results of the different methods evaluated. It was discovered of certain procedures that they were unworthy of the space allotted to them in professional writings. The book contains also the lessons learned in the five years since the war in a large eye hospital. So the care of injuries inflicted in warfare and civilian life are both covered adequately. Though the work limits itself to surgical repair, injuries to the eye and adjacent parts, the considerations involve practically all fields of eye surgery.

It is in every way a book of rare attractiveness.

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JAMES M. NORTHINGTON, M.D., Editor

VOL. CXII

NOVEMBER, 1950

No. 11

## Recent Developments in the Treatment of Anemias

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**I**NVESTIGATION in recent years has been particularly productive in relation to the anemias. New information has been acquired concerning the nature and causes of some types of anemia. Potent anti-anemia principles have been isolated, identified and made available for clinical use.

A few decades ago it was customary to classify anemias as primary and secondary. Primary anemias, particularly pernicious anemia, were considered to be diseases of the blood *per se*, whereas the secondary anemias were thought to be manifestations of other disease states. We recognize now that there are no primary anemias. Whenever anemia is present there is definite, underlying cause. Anemia is comparable to fever—it occurs as a manifestation of many unrelated conditions, but is specific for none. Attempts to classify anemia meet with the same difficulties as attempts to classify fever. The only really satisfactory basis for classification is that of etiology. Characterization of anemias on the basis of the morphology of blood has been popular. Thus anemia may be said to be macrocytic, hypochromic, etc. This type of classification, however, has serious inadequacies. For example, pernicious anemia is almost always a macrocytic anemia. The discovery of macrocytic red cells therefore suggests the possibility of pernicious anemia. However, in numerous other ane-

mias unrelated to pernicious anemia the red cells may also be macrocytic. Similarly, the anemia of iron deficiency is characterized by hypochromia of the red cells. But other hypochromic anemias occur which are not related to iron deficiency and which do not respond to treatment with iron.

There is only one type of treatment which can be considered to be therapy for anemia itself, and that is the administration of blood transfusions. This nonspecific therapy is, of course, temporarily effective in anemia due to any cause. Except for the administration of transfusions we do not treat anemia, we treat the cause of anemia.

Few nonspecific stimulants of blood formation are known. The only really effective stimulus to blood production is oxygen lack. For example, polycythemia occurs in individuals subjected to the low oxygen tension of high altitudes. Obviously this principle cannot be applied in the treatment of anemia. Salts of cobalt in large doses will cause a rise in the R.B.C. and Hgb. in normal individuals as well as in a few patients with certain types of anemia. It seems not improbable that these cobalt compounds exert their effects by interfering with tissue oxidation. It is unlikely, therefore, that cobalt chloride and related compounds will have a place in the treatment of anemia. Iron, folic acid and vitamin B<sub>12</sub> are required for normal blood formation. A deficiency of one of these agents results in the occurrence of anemia. Such an anemia

responds specifically and dramatically to the substance which has been deficient. Unless a deficiency exists, however, the administration of these compounds has no stimulating effect on blood production.

One of the real handicaps to the physician in dealing with the anemias is the lack of simple and reliable clinical tests for detection of abnormalities of the blood. The red cell count continues in general use in spite of its well demonstrated inadequacy. A number of critical studies have shown that even in the hands of the most skilled technicians the red count has a wide latitude of error. As routinely carried out by the average technician the red count is valueless except as a very gross screening procedure. The use of the red count for the routine examination of the blood has often led to the diagnosis of anemia in patients whose blood is actually normal. Similarly, anemias of mild degree may be overlooked. At the Johns Hopkins Hospital the red blood cell count has been entirely discarded as a routine examination. When patients are found to have abnormalities of the blood, red blood counts are then done as a special procedure, always done at least in duplicate, and by technicians specially competent with this procedure. Estimation of the hemoglobin is more simple and reliable than the red count. Its accuracy depends to a considerable extent upon the method employed. In the usual clinical laboratory a variation between plus and minus 10 per cent is to be expected. The test for anemia which we find most simple and reproducible is the determination of the hematocrit. There is one important disadvantage of this procedure and that is that a fairly powerful centrifuge is required. Otherwise the test requires no particular skill and the results can regularly be reproduced with a variation of 5 per cent or less. We use the hematocrit exclusively as a screening test for anemia and perform the red blood count and the hemoglobin estimation only as adjunct studies in determining the type of anemia present.

Accurate knowledge of the state of the blood is of particular importance in following response to therapy. The final confirmatory diagnostic procedure in cases of anemia consists of observation of response to specific treatment. For example, demonstration that an anemia responds to iron is convincing evidence that that anemia was due to iron deficiency. Diagnosis is often most difficult in those situations in which the degree of anemia is mild. In some cases of early pernicious anemia all of the clinical and laboratory procedures available will fail to establish definitely the diagnosis. In these cases the observation of a prompt response to vitamin B<sub>12</sub> or liver extract is of the greatest diagnostic significance. This therapeutic test is of

little value, however, unless the blood measurements are reliable.

The mechanisms by which anemia is produced in many disease states remain obscure. Basic information gradually is being acquired concerning metabolic defects which are associated with anemias caused by infections and related systemic diseases. As yet we have no effective method of treating such anemias, however, except for the correction of the underlying disease. New developments in the field of the hemolytic anemias have added information of great academic interest but, as yet, of little practical value in the treatment of these disorders. We can deal most satisfactorily with the deficiency anemias. I shall, therefore, devote most of the time to a discussion of these conditions.

Let us consider first the iron-deficiency anemias, for these are the most common of the group. Iron is necessary for hemoglobin synthesis. Half the iron in the body is present in the blood. In recent years we have learned much about iron metabolism. The normal individual has a considerable reserve store of iron. It is estimated that, following hemorrhage, an adult can regenerate half his blood volume without receiving additional iron. Only a small amount of the iron ingested in food is absorbed from the gastrointestinal tract. Once absorbed, however, iron is permanently retained. No mechanism is provided in the body for the excretion of iron following its absorption from the gastrointestinal tract. Traces occur in the urine and very small amounts are lost in the bile, but the loss of iron through these channels is almost negligible. An adult male placed on a rigidly iron-deficient diet does not become anemic even after very prolonged periods of iron restriction. The adult female, on the other hand, does lose iron in two ways: (1) through the loss of blood in the menses. The amount of iron lost by normal menstruation is not great, but in menorrhagia it may be appreciable. (2) In pregnancy there is a loss of iron to the fetus. In children iron is required for the expanding blood volume and for other tissue needs even though no iron is being lost. Iron deficiency regularly occurs in a growing individual on a restricted iron intake. Except for the requirements of growth and pregnancy there is no mechanism by which iron deficiency can be produced other than through hemorrhage. Iron-deficiency anemia of adults should be considered the result of hemorrhage unless proved otherwise. Very often the patient has no knowledge that abnormal bleeding has occurred. Common sites of this more or less occult blood loss are the uterus and the gastrointestinal tract. Women not infrequently become anemic as a result of profuse menstrual blood loss without being aware that the bleeding is excessive.

Hemorrhage from the gastrointestinal tract may be particularly obscure. It is surprising how much blood a patient may lose from the intestines without his knowledge.

In situations predisposing to iron deficiency certain other factors may contribute to its development. A man with chronic bleeding hemorrhoids may go for many years without developing anemia, provided the dietary intake of iron is adequate to compensate for the loss. An individual with the same degree of bleeding but on an iron-deficient diet will become severely anemic. In such case the dietary deficiency is clearly not the cause of the anemia, although it contributes to its development.

The presence of HCl in the stomach facilitates the absorption of iron. The absence of acid from the stomach under no circumstances causes the development of iron deficiency. However, here also, in an individual who is losing iron, the impaired absorption contributes to the anemia. In the presence of infection the utilization of iron is impaired. An individual with iron-deficiency anemia often responds poorly to the administration of iron if an infection is present. Infection itself cannot cause iron deficiency.

In general, iron-deficiency anemias, regardless of cause, are hypochromic and microcytic anemias which respond dramatically to the administration of iron salts. To treat such an anemia, therefore, is simple and satisfactory. If, however, the anemia is treated and its cause overlooked, a great injustice to the patient may result. In every case of this disorder it is the responsibility of the physician to determine the cause of the deficiency state. In a young infant whose diet has been restricted to milk the etiology is evident. Iron deficiency in a man, on the other hand, is invariably the result of blood loss and the examination should be continued until the site of hemorrhage has been discovered. In a woman one must assess the factors of menstruation and pregnancy and consider the possibility of bleeding lesions.

Hypochromic anemias will usually respond to iron even though the bleeding continues during the therapy. The fact, therefore, that the patient's blood returns to normal as a result of treatment by no means excludes the possibility of a serious bleeding lesion.

In some adult patients with hypochromic anemia we are not always able, even by careful examination, to determine the cause of the iron deficiency. For this reason it is our policy to administer iron only until the blood returns to normal. If then, anemia recurs, we know that the patient must have been bleeding. Then we continue the search for the cause of the loss of blood.

Most patients are able to tolerate such simple iron compounds as ferrous sulfate. We are unim-

pressed by the need for supplementing this with copper, molybdenum or other so-called adjuvants. Patients who develop gastrointestinal disturbances from ferrous sulfate may do well on other compounds of iron, e.g., ferrous gluconate. Rarely, a patient seems to be unable to take any of the oral preparations of iron. Even less commonly a patient fails to respond to the oral administration of iron, presumably due to absorption defects. In these unusual situations, a solution of saccharated iron oxide, by IV administration, may serve the purpose. This material, marketed in the U. S. under the trade-name Feojectin, is used quantitatively for the synthesis of hemoglobin in hypochromic anemias. There are good reasons, however, why iron should not be employed IV routinely. In the first place, most patients with hypochromic anemia respond promptly and completely to the oral preparation. Secondly, the injection of saccharated iron oxide is occasionally followed by chills, fever, and cardiovascular alterations. Thirdly, iron injected IV is never excreted but remains within the body. While there is no danger of overdosage with oral iron, there is danger of tissue damage resulting from the deposition of iron injected in excess. For this reason no more parenteral iron should be given than that amount calculated to be necessary to correct the anemia. If the patient fails to respond to this, further parenteral therapy should be withheld.

One of the most fascinating of recent developments has been the isolation of vitamin B<sub>12</sub> and the discovery of the role which it plays in hematopoiesis. It has been known since 1926, when Minot and Murphy published the results of their work which won the Nobel prize, that liver contains a principle effective in the treatment of pernicious anemia. Attempts to purify this principle had been unsuccessful until 1947, largely because there was no satisfactory method of assay other than the experimental treatment of patients with pernicious anemia in relapse. In 1947, Schorb at the University of Maryland made the discovery which resulted in the development of a satisfactory microbiological assay for the anti-pernicious anemia principle. Using this technique, investigators at the Merck laboratories rather quickly isolated from liver the red crystalline cobalt compound to which the name vitamin B<sub>12</sub> has been applied. The amount of B<sub>12</sub> which can be obtained from liver is exceedingly small. Fortunately, it has been found that certain bacterial organisms synthesize the vitamin. The present commercial production of vitamin B<sub>12</sub> depends upon this bacterial source.

One of the amazing features of vitamin B<sub>12</sub> is the remarkably low dosage level at which it is optimally effective. A daily parenteral dose of one microgram is adequate for the treatment of per-



nicious anemia. Notwithstanding its tremendous therapeutic potency, the vitamin is surprisingly inert. The compound has been found to contain a carbon and nitrogen linkage as in cyanide. One would suspect, offhand, that it might have toxic properties. However, experimental studies indicate that an amount of  $B_{12}$  over 100 million times the effective therapeutic dose is without toxic effect. Vitamin  $B_{12}$  apparently is necessary for the normal functioning of certain enzyme systems concerned with protein metabolism and probably more specifically with nucleoprotein metabolism. There is now abundant evidence that  $B_{12}$  is required for normal growth as well as for blood formation. The evidence available indicates that vitamin  $B_{12}$  is the only factor in liver extracts necessary for the treatment of pernicious anemia. The antianemic potency of liver appears to depend entirely on its vitamin  $B_{12}$  content. There are several reasons why  $B_{12}$  seems preferable to liver in the treatment of pernicious anemia. First,  $B_{12}$  is available as a crystalline compound much more potent than any liver extract. Injection of  $B_{12}$  apparently does not lead to hypersensitivity and to the occurrence of reactions such as not infrequently follow the injection of liver. Finally,  $B_{12}$  is very much less expensive than liver extract.

Clinical studies with  $B_{12}$  have provided new information concerning the nature of the defect in pernicious anemia. You will recall the old hypothesis of Castle. It was thought that in normal individuals an extrinsic factor derived from food combined with an intrinsic factor secreted by the stomach to form the erythrocyte maturation factor, which was thought to be stored in the liver and utilized by the hematopoietic organs. In pernicious anemia, intrinsic factor appeared to be lacking, and therefore erythrocyte maturation factor was not formed. This hypothesis has undergone some revision as a result of recent work. We now recognize that Castle's extrinsic factor is vitamin  $B_{12}$ . The erythrocyte maturation factor, or liver factor, is also vitamin  $B_{12}$ . Apparently vitamin  $B_{12}$  is not readily absorbed from the gastrointestinal tract. The as yet unidentified intrinsic factor seems to be necessary for the absorption. In pernicious anemia,  $B_{12}$  is inadequately absorbed, presumably because of the absence of the intrinsic factor.

Vitamin  $B_{12}$  deficiency resulting from inadequate dietary intake is uncommon. The bacteria of the intestine seem to be able to synthesize the vitamin so that the substance is made available even to the individual on a deficient diet. It has been demonstrated that the stools of patients with pernicious anemia contain rather large amounts of  $B_{12}$ .

Failure of absorption of  $B_{12}$  apparently may occur in conditions other than pernicious anemia. In certain disorders of the small intestine, e.g.,

sprue,  $B_{12}$  may be inadequately absorbed even though intrinsic factor is present in the stomach.

Pernicious anemia now is recognized as a vitamin-deficiency state rather than a primary disease of the blood. Anemia is only one of the manifestations of  $B_{12}$  deficiency. The glossitis, gastrointestinal disturbances and neurologic disorders of pernicious anemia are apparently specific effects of the  $B_{12}$ -deficiency state. There is no necessary relationship between the time of the occurrence of these manifestations. Thus, severe glossitis may precede the development of appreciable anemia, or patients may suffer from the neurologic dysfunction of the disease before anemia has occurred. The absorption defect in pernicious anemia and related conditions is readily circumvented by the parenteral administration of the vitamin. Amounts of vitamin  $B_{12}$  ranging between 0 and 100 micrograms have been observed to produce a complete hematologic remission. To insure that optimal therapy is provided, we ordinarily give somewhat larger doses: 50 micrograms of vitamin  $B_{12}$  given by injection once a week is certainly more than adequate therapy for pernicious anemia in relapse. It is difficult to determine whether larger amounts of the vitamin are required for the correction of the neurologic abnormalities. We have seen striking neurologic improvement following very small amounts of  $B_{12}$ . However, because of the serious nature of these symptoms it seems wise to use supraoptimal doses. We have treated a number of patients with neurologic changes with 150 micrograms per week. We have not been particularly impressed that greater benefit has come from these massive doses. For maintenance therapy a single injection of 50 micrograms of vitamin  $B_{12}$  given once a month is adequate to maintain patients in complete remission. This therapy must be continued throughout the patient's life.

Patients with pernicious anemia respond promptly and completely to small amounts of the injected vitamin. Failure of such response is strong evidence against the correctness of the diagnosis. Rare cases have been said to require therapy considerably in excess of that usually given. We have not encountered such a case in our clinic in hundreds of patients with pernicious anemia.

While absorption of vitamin  $B_{12}$  from the gastrointestinal tract is defective in pernicious anemia, the vitamin can be absorbed if high concentrations are provided. This is by no means a new discovery, for the dietary treatment described by Minot and Murphy was effective because of the increased intake of vitamin  $B_{12}$ . The therapeutically effective oral dose of  $B_{12}$  appears to be as much as several hundred times the effective parenteral dose. If such large amounts of the vitamin are given orally, the therapeutic response is entirely satisfactory. I am



sure that in the near future pernicious anemia will be treated with oral preparations. Such preparations, however, will have to contain many times the amount of  $B_{12}$  present in those now on the market. A complete hematologic remission will follow a single oral dose of 5 milligrams of the vitamin. In other patients who have received 1 or 2 milligrams by mouth, hematologic improvement has occurred, but not complete restoration of the blood to normal. It seems possible that in the future  $B_{12}$  will be produced sufficiently cheaply so that this type of treatment may be routinely employed. The absorption of  $B_{12}$  can be greatly enhanced by administering it with normal gastric juice containing intrinsic factor. Until intrinsic factor becomes available from other sources, this observation has no practical therapeutic significance.

Prior to the isolation of vitamin  $B_{12}$  great attention had been devoted to the study of folic acid, which appears to be an additional vitamin necessary for normal blood formation. The type of anemia which results from folic acid-deficiency is indistinguishable from that occurring in pernicious anemia and other  $B_{12}$  deficiency states. There is good evidence that there are close interrelationships between the metabolic activities of folic acid and  $B_{12}$ . However, one of these substances cannot be substituted for the other. Clinical folic-acid-deficiency appears to be uncommon. The macrocytic anemias associated with severe dietary deficiency are probably often attributable to the lack of folic acid. In sprue and related disorders characterized by defective absorption from the small intestine, folic acid-deficiency may also occur. A rare macrocytic anemia occurring in, and often referred to as the pernicious anemia of pregnancy, seems to respond specifically to folic acid, although it is refractory to vitamin  $B_{12}$ . It is unfortunate that patients with pernicious anemia will show a striking hematologic remission when treated with folic acid, even though their deficiency is not primarily lack of the vitamin. Patients with pernicious anemia who receive only folic acid invariably develop progressive neurologic changes if the treatment is long continued. Eventually hematologic relapse may occur even though folic acid is given in apparently adequate amounts. For this reason, folic acid should never be used in the treatment of pernicious anemia. Notwithstanding the wide publicity which has been given this vitamin, its clinical use is very limited.

The discovery of folic acid has added important new knowledge concerning blood formation, but its introduction into clinical therapy has probably done more harm than good because of its misuse in the treatment of pernicious anemia. Some cases of sprue, some of extreme dietary deficiency and some of macrocytic anemia of pregnancy respond

specifically to folic acid after failure to respond to  $B_{12}$ . In these cases, folic acid is a very valuable agent. However, it is important to exclude definitely the diagnosis of pernicious anemia before administering this substance.

The sale of antianemic preparations being the source of enormous revenue to the drug manufacturers, these organizations have been quick to exploit the new hematopoietic agents. In my opinion some of the preparations now on the market are dangerous and unfit for clinical use. In view of the extravagant advertising of some of these drugs, your attention is called to their inadequacies.

Recently there has appeared on the market an oral preparation combining small amounts of folic acid and vitamin  $B_{12}$ . These capsules, marketed by a large and well known firm, are recommended for the treatment of pernicious anemia. The amount of  $B_{12}$  which they contain is grossly inadequate for this purpose.

In some of the recent drug-house literature, folic acid is being widely advertised for the anemia of pregnancy. It is true that folic acid is specifically effective in the macrocytic anemia of pregnancy. However, this is a rare disorder. We have encountered only two cases in four years on a large and active obstetrical service. It is apparent that there is no need to prescribe folic acid routinely to pregnant women, or even to those who develop the usual type of anemia.

A very unfortunate development has been the incorporation of folic acid in numerous multivitamin capsules. A number of such preparations now being sold contain sufficient folic acid to produce a hematologic remission in pernicious anemia. Many patients with early pernicious anemia complain of vague symptoms of the type for which physicians commonly employ multivitamins. Thus a patient may complain only of soreness of the tongue, or perhaps some tingling of the fingers. When given multivitamin capsules containing folic acid, these patients will maintain a normal blood picture, while irreversible neurologic changes will take place. In the past two years, we have seen more cases than ever before of pernicious anemia with neurologic manifestations in the complete absence of any blood abnormality. Careful investigation in some of these cases has revealed that the patient had been receiving folic acid in one form or another. Subacute combined degeneration should always be considered a manifestation of pernicious anemia, and patients with this syndrome should be treated for pernicious anemia, even though the blood is normal.

One of the most important diagnostic procedures in cases of anemia is the observation of response to specific therapy. This valuable information is completely lost if more than one antianemia agent is

given at the same time. The use of preparations containing mixtures of iron, B<sub>12</sub>, folic acid and other agents is strongly to be condemned. If a patient responds to iron therapy, it is important that you know that fact. If a patient has pernicious anemia, it is essential to his welfare that the diagnosis be established and adequate therapy provided. Instances in which multiple deficiencies exist in the same patient are rare. In many cases the anemia is refractory to all of the known anti-anemia agents. In these cases, there is no objection to empirical trial of several agents together, although the results are not likely to be gratifying.

Current interest in the therapy of a wide variety of diseases centers about the use of ACTH and Cortisone. These agents have been employed experimentally in a number of blood dyscrasias. It is now well established that patients with acute leukemia will sometimes show remarkable improvement during such treatment. In perhaps one-third of the cases treated, the manifestations of leukemia almost entirely disappear, and the patient appears to be well. However, even though the treatment is continued, relapse occurs and the disease fails to respond to more intensive treatment. The duration of the remission is usually at most a few weeks. We have been impressed by the strikingly rapid regeneration of red cells in some leukemic patients treated with ACTH and Cortisone. There may be marked increase in reticulocytes, with outpouring of new blood and prompt restoration of all blood elements to normal. This observation stimulated us to study the effects of these drugs on certain other refractory anemias of less malignant nature. In most of the few cases treated so far, the results have been unimpressive. However, one case of aplastic anemia in which spectacular results have been obtained, appears worthy of mention.

In hospitals throughout the country numerous cases of various types of anemia have been treated with ACTH or Cortisone. In pernicious anemia, a rise in reticulocytes may occur, but this is not followed by an increase in the red count or hemoglobin. In certain hemolytic anemias, these agents have appeared to decrease the rate of blood destruction. Their final evaluation in these disorders remains to be made. Anemias which are refractory to all other forms of therapy, in general also fail to respond to ACTH.

#### THE ULTIMATE PROGNOSIS OF ACUTE MYOCARDIAL INFARCTION

(M. W. Weiss & W. R. Gray, Louisville, in *Jl. Ky. Med. Assn.*, May)

In this series were 403 M, 81 F; greatest age incidence in M 45 to 65 years, in F a decade later. Of the 176 deaths, aver. survival was 37.6 months. One-third succumbed within one year, four-fifths within five years. Two men lived for 19 years. The younger patients lived longer than the older. All the women who succumbed did so within eight

years. Previous hypertension shortened survival. Previous angina pectoris did not. *The severity of the initial attack gave no indication of the duration of survival.* If congestive failure occurred within the first two months it usually persisted and was a serious prognostic sign.

Cardiovascular disease was responsible for 84% of the deaths. A new myocardial infarction was the cause in 37%; 20% died suddenly; 20% died of congestive failure and 7% from brain softening secondary to cerebrovascular accidents; 10% from neoplasms, and 6% from miscellaneous causes.

Twenty-seven (5%) of all the patients survived a second myocardial infarction for at least two months. Five survived a third infarction for at least two months.

Sixty-four per cent of the 484 are living as of Nov. 1st, 1949. One patient is living after 17 years. Of 151 patients observed from 1940 through 1944, 61% lived more than five years, and 39% died within five years.

Information as to economic rehabilitation was available in 438 cases. Seventy-five per cent had complete or partial economic recovery. Only 12 patients (2.5%) chose to retire in the absence of symptoms.

Patients whose ECG became normal or nearly normal always made a good recovery but persistence of the ECG changes characteristic of an infarction was not generally a bad prognostic sign. Persistent bundle-branch block indicated a serious prognosis. Length of survival or subsequent occurrence of angina pectoris, congestive failure, another infarction or sudden death was not related to the ECG location of the initial infarct.

Clinical recovery was more complete when the heart was of normal size. A small heart never became hypertrophied from the infarction exclusively.

#### ETAMON IN ANGINA PECTORIS

Twenty-eight patients with angina pectoris were treated with tetraethylammonium chloride (Etamon) and 25 of these patients showed symptomatic improvement, as judged by a decrease in the number of anginal and allied attacks per week and by an increase in exercise tolerance. W. J. Atkinson (*Am. Heart J.*, 39:336, 1950) reports that of those who improved, 65% showed a significant decrease in the number of attacks and 60% showed increase in exercise tolerance.

Sixty-five per cent of the 28 patients on this treatment were followed for 6 to 20 months. No harmful effects attributable to the administration of the drug could be noted, although 65% of the patients were over 60 years of age and over 70% had either experienced a myocardial infarct previous to this study or had been in congestive failure at some time (20% had had both infarction and failure).

It is important to judge the correct dose for each patient. With this method the blood pressure and pulse changes were usually not very great, but patients must remain recumbent until they no longer have postural hypertension.

Especially gratifying was the relief of status anginosus and persistent, long-continued aching pain and discomfort which were associated with coronary insufficiency.

Especially in patients for whom all other methods of treatment have proved to be inadequate, the additional relief obtained with tetraethylammonium chloride (Etamon) was gratifying.

ANY METHOD of treatment which is pursued with enthusiasm will prove beneficial, provided it does not flagrantly contravene correct principles.

R. S. Lawson, Melbourne, in *Aust. & New Zeal. J. of Surg.*, April.

## Therapeutic Implications of ACTH and Cortisone

RALPH R. COLEMAN, M.D., Charleston, South Carolina

THE AVAILABILITY of both Cortisone and ACTH makes it necessary for all physicians to become cognizant of the possible usefulness of these two potent biological products. The adrenal steroids have been spoken of as the greatest advance in medicine since the discovery of the microbes. Even before ACTH and Cortisone were used in therapy, Fuller Albright once paraphrased Osler's classic remark about syphilis to say, "If you know the adrenal cortex, you know internal medicine."<sup>1</sup> The rapid developments of the past two years have pointed up the wisdom of his statement. For my theme I shall borrow the title of a recent paper by Hamblen of Duke, "Endocrinology or Endocrinology,"<sup>2</sup> to emphasize anew his plea against the possible abuse of these products by the profession.

Much of our previous knowledge of the effects of Cortisone has been derived from the study of patients with Cushing's syndrome, because many of the features of this disease entity are due to an overproduction of Cortisone-like steroids. Among the clinical features which we may recall briefly are:<sup>3</sup>

- (1) a curiously disposed obesity
- (2) osteoporosis
- (3) hypertension
- (4) decreased glucose tolerance
- (5) painful purplish striae
- (6) polycythemia
- (7) acneform skin eruptions
- (8) dusky cyanotic skin discolorations
- (9) menstrual abnormalities
- (10) increased excretion of corticosteroids
- (11) lymphopenia and eosinopenia.

Starting in 1925 Philip Hench at the Mayo Clinic began to be impressed by the fact that weakness, fatigue and low blood pressure were common among patients with chronic rheumatoid arthritis. This led him to the speculation that the adrenal glands might somehow be involved in the disease. Later he studied the ameliorating effect of jaundice and pregnancy on arthritis and postulated that some hypothetical substance might alter the disease.<sup>4, 5, 6</sup> Before 1938 it was postulated that this substance was only antirheumatic; then it was noted that such diverse conditions as hay fever, asthma, sensitivity to egg, migraine and psoriasis were relieved, at least temporarily, by pregnancy

and jaundice. Such was the state of our knowledge in January, 1941, when, after a conference with Kendall, it was decided to try compound E if it became available. None was available at this time for use on humans.

Kendall's group continued the isolation and synthesis of the various fractions of the adrenal cortical hormones. This work was given impetus during the war and Army Intelligence learned that German scientists had succeeded in isolating a fraction of the adrenal cortex which would enable their aviators to better withstand high-altitude flying.<sup>7</sup> These researches were also carried out in the laboratories of Merck and Company. In May of 1948 small quantities of Cortisone were available for clinical testing, and they were used in Addison's disease with favorable results. Then Hench decided to try it on rheumatoid arthritis. His previous conjectures were strengthened by the further observation that arthritis was temporarily benefited by diverse agents such as foreign protein reactions, starvation, various surgical operations, and even anesthesia without surgery—the common denominator in all of these being the stimulation of the adrenal cortex. I quote from his letter to Merck and Company in the fall of 1948:<sup>8</sup>

"We know that there is a potentially provokable mechanism [for the reversibility of rheumatoid arthritis] which is activated by pregnancy and jaundice very rapidly, by jaundice for example within three days . . . therefore, if any adrenal compound is of real significance in rheumatoid arthritis we would expect to see some results within a few days." He received a small supply of Cortisone and first administered it to a patient on September 21st, 1948.

The story of the isolation and purification of the active adrenal-stimulating principle of the anterior pituitary is equally interesting but will not be set down in detail. In the fall of 1946 the Armour Laboratories first made available a purified adrenocorticotrophin fraction of the anterior pituitary for study of its properties in humans. George Thorn and his group were the first to study this preparation and they found that it produced certain physiologic and metabolic effects.<sup>9, 10</sup> Shortly thereafter, Fuller Albright's group used the preparation and confirmed Thorn's observation. For the next two years the supply of this substance was so limited that the majority of work was done with metabolic-balance studies. However, the effect on two diseases, myasthenia gravis and gout, were

Presented to Staff Meeting, Baker Memorial Hospital, Charleston, Aug. 9th, 1950.



studied, the first by Soffer<sup>11</sup> and the second by Hellman<sup>12</sup> and Wolfson.<sup>13</sup> Later miscellaneous diseases were studied including nephrosis in December, 1948, by Dr. Edith Farnsworth.<sup>14</sup> It is somewhat ironic that at this time Armour Laboratories had this quantity of adrenocorticotropin without being aware of its possible clinical usefulness. In January, 1949, Hench requested a supply to be used in conjunction with his work on compound E—as it was then called, and the rest is medical history.

The known physiologic effects of ACTH and Cortisone in man are now listed:<sup>15</sup>

The first is the potent *anti-rheumatic* effect. There is a rapid regression of the systemic manifestations of arthritis, with loss of fever, decline in the sedimentation rate, return of appetite and a sense of well being, and as a resultant gain in weight and strength.

Next, a change in facial contour occurs with rounding described as a "moon face."

The effects on the skin are the production of acne, hirsutism, keratosis pilaris (sandpaper skin) and purple striae.

Muscular weakness occurs more frequently with Cortisone than with ACTH. This is probably due in some instances to a lowered blood potassium.

In women there are changes in menstrual function in the direction of amenorrhea, in males occasionally a decrease in libido and potentia.

Various emotional disturbances occur, euphoria being the most notable, and this occurs more promptly and noticeably after the administration of Cortisone. This euphoria results in part from the relief of symptoms of chronic illness; however, more direct mental effects are suspected. Both ACTH and Cortisone have produced distinct electro-encephalographic changes. Prolonged administration of either drug has produced depressive states.

The blood pressure changes with either Cortisone or ACTH are not marked except in the pressure of parenchymatous kidney disease, wherein dangerous blood pressure elevation may occur.

Changes occur in the elimination of certain of the urinary steroids. Cortisone results in a sharp decrease in the excretion of 17-ketosteroids (if the values are normal at the beginning of therapy). This is followed in several days by a leveling off or even a slight increase.

The tentative interpretation is as follows:

Cortisone promptly depresses adrenal cortical function so that the cortex produces smaller amounts of steroids—therefore the production of 17-ketosteroids falls off. Later, as the catabolism of the injected Cortisone involves the production of small amounts of 17-ketosteroids, this leads to a secondary increase in excretion.

The normals are:

for men 6-20 mgm/24 h.

for women 4-17 mgm/24 h.

ACTH produces a prompt and pronounced rise in the excretion of 17-ketosteroids, for here the mechanism is different, since the adrenal cortex is stimulated to produce more steroid substance which then appears in the urine in increased amounts.

Cortisone increases the excretion of corticosteroids at the beginning of therapy, but this is decreased later as the function of the adrenal cortex is depressed.

ACTH causes a prompt rise and a sustained increase in the excretion of corticosteroids because ACTH promotes the production of compound F by the adrenal cortex.

(The normal values for corticosteroids are .3 to 1.2 mgm/24 h.)

Careful metabolic and chemical studies of ACTH and Cortisone have revealed the following:<sup>15 16</sup>

ACTH in a dosage of 100 mgm/day for twelve days has produced a negative *nitrogen* and *potassium* balance. For *sodium* and *chlorine* there is initially a marked retention and then increased excretion. A hypochloremic, hypopotassemic alkalosis developed.

Cortisone in a dosage of 100 mgm. daily for 12-30 days produced either no alteration or minimal changes.

However, in double the dosage similar changes—that is negative nitrogen and potassium balance and variable changes in sodium and chloride balance occur again with the production of a mild hypochloremic, hypopotassemic alkalosis.

For uric acid—both ACTH and Cortisone lead to moderate increases in urate excretion with decreased serum-uric-acid values.

In patients with gout both ACTH and Cortisone results in changes in the pattern of urate elimination so that the exhibition of Cortisone or ACTH may result in either the initiation or the alleviation of gouty attacks.<sup>12</sup>

Both ACTH and Cortisone heighten the excretion of creatine and creatinine.

Detectable changes in carbohydrate tolerance are produced by both—so that they may produce

(a) hyperglycemia

(b) glycosuria

(c) decreased insulin sensitivity.

In addition ACTH is thought to directly influence the renal threshold for glucose. These changes are not of major concern for the non-diabetic patient. However, in latent diabetics—overt symptoms of diabetes mellitus may result, and in diabetics receiving insulin the insulin requirement may be increased from one to three times.



Blood glutathione studies revealed a rise in the glutathione content of the circulating erythrocytes. Serum albumin and globulin levels have been changed toward the normal when abnormal values existed prior to the administration of ACTH or Cortisone. There have been no consistent changes in the basal metabolic rates except reduction if the disease process produced hypermetabolism.

As to the *cellular elements* of the blood, Cortisone has produced an increase in the total leukocyte count without significant changes in the lymphocyte or eosinophil counts, while ACTH causes almost complete disappearance of the circulating eosinophils.

This physiological effect is the basis of the Thorn test.<sup>17</sup> The test consists of the injection of 25 mgm. of ACTH and measurement of the effect upon the circulating eosinophils. With the Randolph<sup>18</sup> method of counting eosinophils the normal is around 200 cells. In the presence of satisfactory adrenal cortical response there is a fall of at least 50 per cent (more commonly to 0) at the end of four hours. The test will prove to be increasingly useful in (1) the diagnosis of disease of the pituitary-adrenal axis; (2) in determining the state of adrenal cortical reserve in patients—*e.g.*, those coming to surgery; or in patients with debilitating disease—and (3) in deciding whether ACTH or Cortisone should be used in treatment. For example, if a dose of 25 mgm. of ACTH is given intramuscularly and a total eosinophil count is made at the time of administration and four hours later, should the second count show no reduction then one can state with reasonable certainty that adrenal cortical insufficiency exists and that the administration of ACTH may prove of little benefit. In patients submitted to prolonged surgical procedures a Thorn test can give a fair index to the state of adrenal cortical reserve, and the administration of large doses of adrenal cortical extract can prove life-saving in some instances.<sup>19</sup> Where elective procedures are contemplated, the patient can be treated until the optimum time for operation is evidenced by the test.

A hospital laboratory facility which does not provide ready and accurate eosinophil counts cannot claim to be complete in its service.

Other physiologic effects which require mention include:

(1) The effect of *enzyme systems*. This has been incompletely studied. It is of interest, however, that in ulcerative colitis the excretion of lysozyme in the intestinal tract is high, and that the action of this enzyme is believed to be in part responsible for the disease. The effect of ACTH and Cortisone may be the marked decrease in the secretion of this enzyme.<sup>20</sup> In general, we might say that every enzyme system and every enzyme

inhibitor system which has been studied to date is altered in some way by these hormones. This suggests that the major action of the adrenal corticoids may be at the tissue-cell level.

(2) ACTH and Cortisone inhibit all acute inflammatory reactions regardless of the cause.

(3) They inhibit or block excess *fibroblastic proliferation*. This may be the basis for the effect on the chronic proliferative diseases. Also, wound healing is retarded. (Some of the articular biopsies which Hench employed in his studies failed to heal readily.)

(4) They render body cells immune to a wide variety of noxious agents—such as bacteria, antigens and chemicals. In treatment of alcoholism with ACTH it was noted that some of the patients had developed lobar pneumonia with bacteremia—yet they were up and about without systemic manifestations of illness. Finland<sup>21</sup> and his group have treated a group of patients having pneumococcal lobar pneumonia with ACTH, and so brought about prompt lysis and disappearance of toxicity; *but*—in some at the end of one week the blood cultures were still positive for pneumococci.

(5) *Inhibition of fever*—So far as clinical testing has proceeded the exhibition of Cortisone and ACTH has resulted in return of the body temperature to normal. Whether this is an antipyretic effect or simply due to reversal of the disease process is not clear.

(6) *Relief of pain*—Similarly, pain, regardless of its cause, is generally relieved. This, too, is probably due to reversal of disease processes; however, some more fundamental biologic process may be involved.

From this brief presentation, the inference must be entirely obvious that the profound and far-reaching physiologic effects of Cortisone and ACTH will necessarily call for careful and wise consideration in their use. A careful balance must be achieved between what is most desirable from the standpoint of the disease in question on the one hand and what is better from the standpoint of the overall welfare of the patient. The multifarious physiologic alterations so brought about should not be called "side-effects" or "toxic effects," because they represent true physiologic effects of these biologic substances.

Some of the disease states in which Cortisone and ACTH have been used will now be listed. They will be presented roughly in order of what seems to be at this time practical therapeutic possibilities. It will be noted that arthritis does not head the list.

(1) *Status Asthmaticus*:

Harvey and Howard,<sup>22</sup> Randolph,<sup>23</sup> Rose<sup>24</sup> and others have reported on the dramatic response of severe bronchial asthma to ACTH. Similar effects

are reported with Cortisone, but detailed clinical reviews have not yet appeared in the literature. My personal experience is limited to two cases with severe bronchial asthma, one of which will be reported elsewhere.<sup>25</sup> This was a severe asthmatic who was resistant to all conventional modes of therapy who received dramatic relief from ACTH in dosage of 100 mgm. daily for three days followed by a tapered dose. Remission was achieved for a period of three months. At the end of this time a second attack occurred following an emotional upset. Smaller daily dosage was attempted with only fair amelioration of symptoms but without termination of the attack. Finally, full dosage was given for a forty-eight-hour period at which time our supply of the drug was exhausted. At this time milder asthmatic paroxysms continued. It was decided to postpone further therapy until a severe attack occurred and this was done—at which time full dosage (25 mgm. q 6 h. im.) was given for three days with some tapering at the end of administration for a total of 625 mgm. She again achieved complete remission and has remained in remission for the past month.

The second case was that of a moderately severe chronic bronchial asthmatic who was treated as an outpatient. She was asthma-free in twelve hours, and complete remission has been obtained up to two months on a total dose of 260 mgms.

Preliminary observations would therefore indicate that ACTH and Cortisone will prove to be extremely valuable agents in the management of severe bronchial asthma. The short period of administration necessary and the prompt clinical response usually obtained make the development of the untoward physiologic effects less likely. In addition, the cost is no longer prohibitive for short term administration. The question of continued maintenance dosage following termination of the attacks has not been settled. I believe that smaller maintenance dosage will prove to be useless and probably unwise and that repeated use of "thrust" doses is preferable. Only accumulated clinical experience will settle this point, however. ACTH and Cortisone are to be regarded as important adjuncts to therapy and will not replace careful allergic work up, general symptomatic care, etc.

## (2) *Acute Inflammatory Disease of the Eye:*

Gordon and McLean<sup>26</sup> and Olsen and Smith<sup>27</sup> have reported the effects of ACTH in ophthalmological conditions. I am sure that they will be followed by a host of other articles. They reported the marked effect of ACTH on certain inflammatory diseases of the eye among which may be listed:

- Acute iritis, keratitis, uveitis, choroiditis
- Optic neuritis
- Sympathetic ophthalmia
- Acute secondary glaucoma
- Conjunctivitis.

These effects would be anticipated on the basis of inhibition of inflammatory reaction by adrenal cortical stimulation. ACTH inhibits acute inflammatory reaction from almost every cause, but those occurring in the eye clear up with remarkable speed. By experience in this field is limited. The ophthalmologists will be able to tell us more as their experience with these drugs widens. I had the privilege of seeing rapid resolution of a case of chronic iritis recently, with prompt relief of pain within one hour after 25 mgm. of ACTH was given intramuscularly.

ACTH and Cortisone are practical in the treatment of certain inflammatory and hypersensitivity reactions in the eye because of small dosage required, short term administration and ready observation of the lesions. It should be mentioned that only the inflammatory reaction is blocked, and that careful bacteriologic studies are still necessary.

## (3) *Skin diseases:*

Skin diseases of hypersensitivity origin respond to therapy with ACTH and less readily to Cortisone. Atopic and contact dermatitis, exfoliative dermatitis, drug sensitivities, urticaria, penicillin reactions—all are blocked promptly. Pemphigus and psoriasis may also be modified by these substances.

I have had a limited experience in this field. I have treated two cases of pemphigus with Cortisone. The first was an elderly white man with a generalized bullous form of the disease. The dosage schedule employed was 300 mgm. the first day, 200 mgm. the second day and 100 mgm. daily thereafter for a total of 1 Gm. The skin response was dramatic with prompt healing of all of his lesions. Our supply of the drug was exhausted, and the poor fellow later fell out of bed, sustained a fractured vertebra, and died shortly afterwards of complications therefrom. Up until the time of his death, which was two weeks after cessation of therapy, his skin was still in fairly good condition, although new bullae had begun to appear.

The second case is that of a middle-aged woman with moderately severe pemphigus of two years' duration who received a total of 3 Gm. of Cortisone with less dramatic effect, possibly because her skin involvement was less extensive. New lesions continued to appear during therapy, although the overall response was favorable. Standard glucose tolerance tests before therapy showed impaired glucose tolerance. With therapy she became diabetic with glycosuria, hyperglycemia, and polyuria. The eosinophil counts might be of some interest, although no conclusions can be drawn. In the first case a high count was obtained—around 1500—with a 50 per cent drop after Cortisone. In the second case normal eosinophil counts

were present both before and during therapy. Since marked eosinophilia occurs in pemphigus and other skin diseases, reevaluation of the significance of these counts will now have to be made in the light of the newer developments of adrenal physiology. It may be that the presence of eosinophils and their response to ACTH or Cortisone may have some implications in therapy.

I have also treated a generalized epidermophytid reaction in a diabetic with ACTH with gratifying results. Pruritus was relieved within two hours after the first injection of 25 mgm. of ACTH. On the following day, since he was symptom-free, the dosage was halved with consequent return of symptoms. On a dosage schedule of 20 mgm. q. 6 h. for 48 hours his symptoms were completely controlled and later 10 mgm. was adequate. He was a mild diabetic well regulated on diet without insulin. During ACTH therapy small doses of regular insulin were administered before meals to combat the diabetogenic effect. His diabetes was readily controlled.

Diabetes mellitus is a relative and not an absolute contraindication to therapy with ACTH or Cortisone. Suitable adjustments in diet and insulin requirements must be made, however.

Recently, I have also treated an erythematous type of skin reaction to penicillin with 40 mgm. of ACTH daily with satisfactory control of symptoms. A severe serum-sickness from tetanus antitoxin also responded promptly with alleviation of all symptoms in twelve hours. Multiple ant-stings with severe edema and itching was also brought under control with ACTH.

There seems to be little doubt that ACTH and Cortisone will have a wide usefulness in dermatology more particularly in those hypersensitivity type reactions which are ordinarily self-limited, as for example, penicillin reaction or severe exfoliative dermatitis due to iodide reaction.

The outlook for the chronic skin diseases such as pemphigus and psoriasis is not as hopeful.

#### (4) Gout:

ACTH is an effective remedy for terminating an attack of gout. At least 50 mgm. should be given initially and colchicine must be given concurrently. In the light of our experience with one case, I am inclined to believe that the report of Margolis is somewhat overoptimistic.<sup>28</sup> Our patient was a 35-year-old salesman with classical gout. Forty mgm. of ACTH given at the outset of an attack resulted in suppression of symptoms without complete relief. In twelve hours inflammatory signs reappeared—an additional 40 mgm. was administered with a like result. Finally 50 mgm. resulted in termination of the attack on the third day. Colchicine was administered concurrently. Inadequate dosage

of ACTH without colchicine will probably aggravate gout. One or possibly two doses of 50 mgm. together with colchicine is an effective method of aborting attacks of gout. Needless to say, no cure is effected—however, the relatively small dosage required lends practicability to this method of control of the arthritic manifestations of the disease.

#### (5) Ragweed Hay Fever:

In this connection I can only relate Randolph's experience.<sup>29</sup> He administered 25 mgm. q. 6 h. im. for 48 hours and reported that these patients who were severely sensitive to ragweed pollen remained symptom-free for the remainder of the ragweed hay fever season. Hench reported that several of his arthritics who received Cortisone were free of hay fever symptoms—even after provocatives such as sleeping by an open window. Smaller dosage would probably be equally effective.

In this connection it might be interesting to mention the effect of ACTH on nasal polyps. These lymphoid tissues regress or may even disappear completely within a few days of treatment.

#### (6) Acute Rheumatic Fever:

Both ACTH and Cortisone cause clinical reversal in acute rheumatic fever. Fever and joint manifestations recede, pericardial fluid absorbs, heart murmurs change, ECG become normal. Clinical reports are uniformly optimistic although guarded when congestive heart failure is present. The danger of electrolyte retention must be mentioned. These drugs will probably be of little value in chronic active rheumatic fever and of no value in valvular damage, the result of previous attacks.

A child with acute rheumatic fever should, however, be given the advantage of ACTH or Cortisone.

#### (7) Löföler's Syndrome:

In this disease state, presumably one of hypersensitivity where pulmonary infiltrations are associated with marked eosinophilia, Rose reported the clearing of pulmonary infiltrates in a matter of hours.<sup>30</sup>

#### (8) Acute and Chronic Idiopathic Ulcerative Colitis:

Most of the cases reported to date have been long-standing severe cases. Marked symptomatic benefit occurred even when pathologic reversal did not occur. In view of our present-day inadequate therapy of this disease, ACTH or Cortisone should be considered in severe cases failing to respond to routine therapy provided adequate hospitalization is undertaken to follow the metabolic and physiologic alterations which are bound to occur.

Regional enteritis is likewise reported to respond to therapy, but reports are too brief to permit evaluation.



(9) *Panhypopituitarism:*

In cases of panhypopituitarism of long standing the adrenal cortex may be only slightly responsive to ACTH. A BMR should be performed and the BMR should be brought to normal with thyroid extract before beginning therapy.

The treatment of long-standing cases of panhypopituitarism with ACTH and Cortisone involves a major therapeutic and financial responsibility which makes therapy by the average practitioner, for the present at least, somewhat impracticable.

(10) *Idiopathic Hypoglycemia:*

Among the fortunately rare metabolic faults which produce somewhat antagonistic metabolic effects is the condition known as spontaneous idiopathic hypoglycemia. McQuarrie and his associates have reported excellent control of the disease with disappearance of the convulsions with 10-20 mgm. of ACTH given every 48 to 72 hours.<sup>31</sup>

(11) *Rheumatoid Arthritis:*

The startling effects of Cortisone and ACTH on the clinical picture of rheumatoid arthritis needs no detailed description here. Hench in his first comprehensive summary<sup>8</sup> reported on the use of ACTH and Cortisone both singly and in combination on 23 patients. In 14 the anti-rheumatic effect was very marked, in 8—marked and in 1—moderate.

Generally after withdrawal of the drugs relapses occurred rather quickly—within 1-4 days—stiffness reappeared, appetite diminished, fatigue was pronounced and the sedimentation rates rose toward former levels. The only encouraging note is that in some patients relapses were delayed significantly and in a few remissions continued for weeks or months.

I cannot emphasize too strongly that Cortisone and ACTH cannot be regarded at this time as satisfactory therapy for rheumatoid arthritis. Hench has phrased it this way, "The use of these hormones should be considered an investigative procedure, not a treatment. We can now repeatedly produce controlled remissions of several diseases, to be followed by more or less controlled relapses, both of which processes can be studied intensively by a variety of clinical, biochemical and immunologic methods. It is hoped that such studies will in time lead to an improved and practical method of treatment . . ."

It might be added that such time is not yet at hand. Recently in Boston I had the opportunity of seeing a child with Still's disease who over a period of many months of therapy has had sixteen remissions and as many relapses initiated by ACTH. The adrenal steroids are not the panacea for arthritis as some may have been led to believe.

(12) *Miscellaneous:*

As might be expected ACTH and Cortisone have been tried in practically every disease state known to man. The remainder of my listing includes those diseases in which these drugs are of dubious value.

*Other Collagen Vascular Diseases:*

These include periarteritis nodosa, scleroderma, dermatomyositis, and disseminated lupus erythematosus.

Favorable responses have been reported, even some fairly long remissions. These should be accepted with caution although the ability of the drug to modify some of the manifestations of the disease is rather obvious.

I have employed ACTH in a known case of scleroderma with disappointing results:

*Nephrotic Syndrome:*

ACTH has been shown to produce diuresis after a period of initial fluid and electrolyte retention.

*Leukemias and Lymphomas:*

Temporary benefit is reported in the leukemias and lymphomas but without fundamental alteration in the cellular pathology. A few instances where acute leukemias have been converted into subacute or chronic forms of the disease are reported. The natural willingness of parents to "try anything" for this hopeless malady will undoubtedly lead to widespread employment of these drugs.

*Multiple Myeloma:*

As in the case of other neoplastic disease varying degrees of alleviation to remission are produced.

*Myasthenia Gravis:*

The curious feature here is that the patients are worse during therapy but that improvement, sometimes marked, occurs after cessation of therapy.

*Pernicious Anemia and Aplastic Anemias:*

Castle has pointed out that ACTH can produce a reticulocyte response equal to that of liver extract.<sup>32</sup> No prolonged rise in red blood counts follows, however. ACTH is not to be regarded as satisfactory for pernicious anemia. Conflicting reports are in the literature in regard to aplastic anemia.<sup>33, 34</sup> Apparently ACTH favors the release of pre-formed elements from the bone marrow, may increase the rate of maturation, but will not induce bone marrow regeneration.

*Pulmonary Berylliosis:*

Improvement has been reported in beryllium granulomatosis in one patient who received ACTH with reduction of pulmonary infiltration.<sup>35</sup>

*Acute Alcoholism:*

J. J. Smith at Bellevue has formulated the attractive theory that alcoholism is a metabolic disease.<sup>36</sup> He obtained striking improvement in treatment of delirium tremens with ACTH.



### Hepatitis:

The clinical features of both acute and chronic hepatitis are modified to some extent by ACTH.<sup>37</sup>

### Anorexia Nervosa:

ACTH has been used to advantage in anorexia nervosa because of its appetite stimulating effect.<sup>33</sup>

### Addison's Disease:

Cortisone alone has proved to be inadequate for maintenance of patients with Addison's disease. It is valuable, however, when used in conjunction with Desoxycorticosterone acetate.

### SUMMARY AND CONCLUSIONS

ACTH and Cortisone have profound and far-reaching bodily effects. These effects in many instances modify certain manifestations of disease. Some of these effects have been reviewed. Their clinical usefulness is now being explored. At the present time their use must be regarded as clinical experimentation and not as established therapy. As with all other potent biological products, harmful effects are to be expected in some instances. These can be avoided only by a fundamental knowledge of adrenal physiology.

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#### PSYCHONEUROSIS IS SIGNIFICANT IN GENERAL PRACTICE

(R. W. Waggoner, Ann Arbor, in *J. A. M. A.*, June 28th)

It is essential that every physician obtain some understanding of psychiatric principles and utilize these principles in the treatment of *all* his patients. Each patient must be considered as a person who is ill and who has individual physical and emotional reactions to that illness.

The patient who has influenza followed by asthenia may by improper recommendations for rest from his physician have these symptoms continued much longer than necessary. The result is an unhealthy way for the patient to meet his life's problems.

To tell a patient that he has a "nervous stomach" or "nervous exhaustion" is extremely harmful. It gives him a handle to which he may attach his symptoms and tends to make him persist in retaining such symptoms.

Interpretation of the symptoms to the patient is of value, but seldom should more than tentative interpretations and correlations be made. An approach such as "Do you think this might be bothering you?" may lay the groundwork for the patient's adequate understanding of his difficulty.

#### MAKE MORE USE OF TUBERCULIN TEST AND SPUTUM EXAMINATION

(H. E. Hilleboe, Washington, in *Minn. Med.*, June)

The use of the intracutaneous tuberculin test on every new patient who has not been recently examined for tuberculosis should be a routine. Reactors to tuberculin should have chest x-ray films made and interpreted by physicians with training in chest diseases. The general practitioner can get expert help from sanatorium physicians, chest specialists, and radiologists in his area on all routine chest films and so can develop skill in the interpretation of films. The alert physician will insist upon a sputum examination of all patients who cough or expectorate. Such practice will be rewarded by the discovery of t. b. in three or four out of every 100 specimens examined. The family doctor will fairly often discover that a patient with slowly-resolving pneumonia has an acid-fast reason for prolonged convalescence.

The success of the whole movement against tuberculosis may well be determined by the efforts and leadership of general practitioners.

HEMOCHROMATOSIS develops in one in 5,000 diabetics, and it may well be that you will never meet a case. The disease may be due to an inborn error of metabolism with an accumulation of small amounts of pigment over a long period. The triad which comprise this entity are pigmentation of the skin, hepatic cirrhosis, and diabetes mellitus.

—J. C. Doane *et al.*, in *Penn. Med. J.*, Oct.

## CASE REPORT

### UNRESOLVED ATYPICAL PNEUMONIA

THOMAS D. CLOYD, M.D., Florence, Alabama  
With the Collaboration of L. J. McADAMS, Ph.D.

IN THIS geographical area numerous cases of atypical pneumonia occur throughout the year, during the fall and winter sometimes reaching an epidemic stage. For the want of a better diagnostic term it is called virus pneumonia, although the identity of the etiologic agent is not known. Each epidemic is a local exacerbation, or each is an entity. No two are alike. Hence, the diagnostician must use his judgment to differentiate and to determine the exact method of treatment that each individual case of atypical pneumonia requires. Therefore, there can be no set rule which will exact the need for any one particular antibiotic in such cases.

Since atypical pneumonia—called variously acute interstitial pneumonia, acute influenzal pneumonia, atypical bronchopneumonia, and virus pneumonia—occurs frequently in various sections of the country, the following case of unresolved atypical pneumonia may be valuable as an illustration of the misuse of a sedative expectorant, of an effective treatment with a stimulant expectorant, and of the susceptibility to atypical pneumonia of certain patients with a background of anxiety neurosis.

#### REPORT OF CASE

A white spinster, aged 42, whose occupation is college professor, first examined on June 17th, 1950, reported a marked susceptibility to atypical pneumonia. On May 20th, she had a dry cough, anoxia, and a temperature elevation to 101° F. at 8 a. m. and that she took—on her own initiative—chloromycetin (0.5 Gm. every three hours until 3 Gm. had been administered, then 0.5 Gm. four times daily) along with Duracillin tablets of 100,000 units each, every three hours until 900,000 units were taken, and Daisin capsules, one every four hours for three days. Her temperature became normal after thirty-six hours; but râles were present in the right, lower lung lobe; and she experienced oxygen lack, and difficult and rapid breathing, for which she took one isuprel sublingual tablet of 10 mg., t.i.d. After the afebrile period, the chloromycetin was continued for three days, during which time she coughed paroxysmally and expectorated blood-stained mucus and later grayish, viscid sputum. She then took cheracol, one teaspoonful every three hours for three days. When the cheracol had no effect, she changed to terpin hydrate and codeine, one teaspoonful every four hours, until June 17th. At this stage she consulted another physician who made a fluoroscopic examination of her lungs and advised her to continue

the chloromycetin; but she refused to follow this advice, because it appeared illogical. She had had a similar attack of atypical pneumonia symptoms, during the last week of March, 1950, which had cleared up under chloromycetin only.

The patient had measles, mumps and whooping cough in early childhood, a mild anxiety neurosis from March to August, 1945 (nervous tension leading to muscle spasm), and a series of upper respiratory infections since 1934 up to the present, including atypical pneumonia in October, 1945, again in January, 1948, and at least two subsequent attacks a year in 1949 and 1950, that were not diagnosed or treated by a physician, but by herself.

Her height was 63 inches; weight 140 pounds, temperature 98.6° at 5 p. m. The skin was soft with no increased warmth. The thyroid was not palpable, and no bruit or murmur was to be heard; but a small adenoma was visible and palpable. The heart was normal in size, location, and impulse, its action irregular, every tenth to eighteenth beat extrasystolic. The rate was 74; the blood pressure 120/80. Moist râles were heard over the right lower lung base, and signs of resolution were audible in the right lower lung, fore and aft.

The blood and urine findings were normal, the basal metabolic rate plus 3. The roentgenogram of the chest showed multiple areas of increased density in the right lower lobe. These areas were of varying size, and their outlines were confluent and hazy. There was a considerable variation in the density of different parts of the same area as well as between the different areas.

A diagnosis of unresolved atypical pneumonia in the lower lobe of the right lung was made.

The following prescriptions were given: ammonium chloride drams 2, aqua 1 ounce, spirits of chloroform drams 2, syrup of thiocol q. s. ad 4 ounces—small teaspoonful every two to four hours as needed for cough; and tablets of ammonium chloride, enteric coated, 7½ grains, one mid-morning, mid-afternoon, and bedtime.

Reexamination of the patient's chest June 19th showed that the consolidation in the right lower lobe had loosened. The expectoration was less viscid and contained no blood. June 20th, resolution, the right lower lobe had cleared to a very remarkable extent, the tactile fremitus had diminished and the breath sounds were becoming more normal. The bronchial discharge was freer. However, the patient had developed intercostal neuralgia, right mid-axillary line. One-half tablet of aspirin, phenacetin and caffeine every three to six hours for pain and rest was prescribed. Examination June 25th showed that the right lower lobe had almost cleared. The ammonium chloride was decreased to 7½ grains, mid-morning and mid-afternoon. The

intercostal neuralgia had disappeared, but the patient had developed lower margin pleurisy on the left side. Thiamine chloride, 100 mg. daily; sodium salicylate 10 grains, enteric coated, one after each meal and at bedtime; and the external application of methyl salicylate were prescribed. On July 3rd the patient's chest had cleared, the lower margin pleurisy had gone, the bronchorrhea was gradually disappearing. On July 15th all symptoms had disappeared, and the patient was dismissed.

#### COMMENT

This is a case of unresolved atypical pneumonia in the right lower lobe, the resolution of which was prevented by the use of a sedative expectorant, whereas a stimulant expectorant was needed. Moreover, it illustrates a successful treatment with an effective stimulant expectorant, and indicates the marked susceptibility of certain patients, who have a background of anxiety neurosis, to upper respiratory infections and atypical pneumonia.

#### SUMMARY

An unusual case of unresolved atypical pneumonia in the right lower lobe, the resolution of which was prevented by the use of a sedative expectorant, whereas a stimulant expectorant was needed, is reported.

#### EDEMA OF THE LEGS AND ITS CONTROL BY A FLEXIBLE LACED STOCKING

(Louis Kaplan, Philadelphia, in *Penn. Med. J.*, Oct.)

Edema of the legs following thrombophlebitis may persist for a long time, increasing during the day and decreasing while recumbent.

The heavy-weight elastic stocking and the lighter Lastex and similar types of stockings are useful; but there is a better stocking, one made of heavy, slightly elastic woven material, accurately cut to fit the leg and stitched up the back from heel to knee. The patient is instructed to put on and lace the stocking firmly each morning on arising. As the edema subsides over a period of days or weeks, the slack is taken up by the laces. When this no longer suffices the seam at the back is cut to proper size. This stocking has proved to be useful in refractory cases of phlebitic edema.

#### CHERRY DIET FOR GOUT AND ARTHRITIS

(L. W. Blau, Houston, in *Texas Reports on Biology & Medicine* No. 3, 1950)

Colchicine has been used since the sixth century both for the relief of attacks of gouty arthritis and for prophylaxis. Cincofen was found to be effective, but toxic. Neocineophen is as effective, and less toxic. ACTH has aroused great hope in arthritic sufferers. Its expense deers its use.

There is lack of clinical and laboratory data and control in this report. Observations made by responsible physicians suggest the propriety of publishing the information. In 12 cases of gout, the uric acid of the blood has been decreased to its usual average and no attacks of gouty arthritis have occurred on a non-restricted diet in 12 cases, as a result of eating one-half pound of fresh or canned cherries per day. Four of these patients report greater freedom of the joints of the fingers and toes.

The juice of the water-packed cherry appears to be as effective as the pulp. All cherries appear to be equally effective. No efforts have been made to identify the active principle involved.



# DEPARTMENTS

## GYNECOLOGY

### TRAUMATIC DISEASES OF THE CERVIX UTERI

WILLIAM S. DOSHER, M.D., F.A.C.S., Wilmington, N. C.

THE CATEGORY of traumatic cervical diseases can obviously be divided into two groups—the fresh or acute laceration, and the old or chronic. The management of the two groups requires quite a different approach.

The acute lesion is usually the laceration of the cervix which, as a rule, accompanies childbirth or some form of cervical instrumentation. The use of instruments or any type of mechanical delivery contributes greatly to the production of this lesion. The lesion may vary from microscopic trauma to gross tears extending up into the lower uterine segment. Indeed, the entire cervix may be torn away. Naturally hemorrhage of varying degrees is the result of this lesion, the hemorrhage being in proportion to the size and type of vessels lacerated. A small laceration may produce fatal hemorrhage if strategically located and not controlled. Hemorrhage from a large laceration not involving large vessels may stop spontaneously. I have, in my experience, seen death resulting from hemorrhage from a laceration no more than three cm. long in the cervix.

Our problem in dealing with this lesion, consequently, resolves itself into ways and means of controlling hemorrhage, and making blood replacement. The measures taken to control this hemorrhage vary from one extreme of a few interrupted sutures, to the other of total hysterectomy. Packing may be the procedure of choice when the lesion extends into the base of the broad ligament, and its apex cannot be reached for suturing. Blood replacement may be imperative and its prompt administration in large amounts is occasionally the deciding factor in achieving a favorable outcome. As these lesions are most often a complication of pregnancy, it argues well in favor of conservatism in the practice of obstetrics. It also goes without saying, that a well-run blood bank is a necessary adjunct to any hospital that assumes the responsibility of the obstetrical patient.

Lacerations can be easily overlooked at the time of delivery. Hence, the possibility of cervical lacerations must be borne in mind, and the cervix inspected after forceps or manual deliveries. Only too often they are discovered after the patient has

been put to bed and massive hemorrhage and shock have taken place. More than normal bleeding at the time of delivery should suggest the possibility of cervical laceration. Bleeding, therefore, in the recently-delivered patient requires an immediate and intelligent appraisal and prompt and appropriate measures of control, including the administration of blood and plasma in many cases. The lack of prompt and intelligent care in these cases may, and often does, result in a catastrophe.

The management of the old laceration of the cervix is quite a different problem from that of the acute. Old lacerations are important because they most often become infected and produce symptoms such as leukorrhea, backache and dysuria, and they do not tend to heal spontaneously. It may also produce distant lesions as arthritis and iritis. Worst of all, the old infected cervical laceration is the most common gynecological lesion in the female body that possesses carcinogenic possibilities. To illustrate this, I will quote Novak:

"A number of studies of large series of cases have been made on this point (Pemberton, Smith et al., Bland and Graves) and these have been summated by Saltzstein and Topcik. Of 18,562 patients who may be considered to have had adequate treatment for cervical irritative lesions, only 15 were known to have developed cancer later. On the other hand, of 2,255 patients who actually had cervical cancer only 33 had had adequate treatment of preëxisting cervical lesion."

The above facts, therefore, constitute the basis for treatment of infected lacerations of the cervix. The non-infected laceration usually needs no treatment since it does not produce symptoms and does not adversely affect childbearing. Repairing these may be only for cosmetic purposes. Once completely healed they do not tend to become infected.

According to Adair, the propagation of an erosion or chronic cervicitis in a laceration is as follows:

"Trauma is an all important factor, especially that associated with childbearing. Lacerations and abrasions of the cervix leave raw surfaces which become covered with cuboidal or columnar epithelium, as the inflammatory reaction affecting the superficial area subsides. The erosions on the lacerated cervix persist for months or years, as healing does not take place until the area is covered with squamous epithelium. An analogous condition occurs when the laceration permits some eversion of the cervical lips, exposing the endocervix to the bacterial flora of the vagina from which it is normally protected by the small external os and the downward flow of the cervical secretion.

"The healing of these erosions has been supposed to occur by a metaplasia of the epithelium or by replacement with newly formed epithelium.

"The best evidence seems to point to a growth



of the squamous epithelium underneath the cuboidal or columnar epithelium, as we have demonstrated in serial sections using mucicarmine stain to differentiate the mucous-producing from the squamous type of epithelial cells."

Formerly trachelorrhaphy and amputation of the cervix were procedures most often resorted to for therapy and this required hospitalization. Today, however, the vast majority of these lesions can be treated in the office, using either thermal or chemical cauterization with agents like silver nitrate and negatan. The chemical agents are slow-acting and are not recommended. The author prefers either the actual cautery or coagulation or conization, which is reserved for the more advanced lesions. Bearing in mind that on inspection one cannot differentiate an erosion for carcinoma, biopsy is freely used in order not to overlook the latter.

Cauterization and coagulation will cure the vast majority of these lesions, and it can be done as an office procedure without anesthesia. The technique is simple and can be easily mastered. Conization, on the other hand, requires moderate training and special equipment, but the procedure can be done in the office. Also, it can be done without anesthesia since the cervix is relatively insensitive to pain. About all the patient complains of is a uterine cramp similar to a labor pain. It is advantageous to use a sulfa cream post-operatively because this tends to prevent infection and hastens healing.

None of these procedures should be carried out in the presence of any acute infection lest one precipitate an acute pelvic inflammatory process. Should this complication arise, it is usually promptly relieved by the exhibition of antibiotic and sulfa drug.

Post-operative bleeding occasionally complicates these procedures and may not occur until ten to eighteen days afterward. It occurs most often as the slough separates. Usually this can be controlled by packing the cervix and vagina. Suturing the bleeding point is occasionally necessary. This procedure should not be carried out in the presence of pregnancy for fear of producing an abortion. It is noteworthy that those that I have inadvertently treated during early pregnancy did not abort.

Stenosis of the cervix is occasionally a complication of this treatment, but this is usually not difficult to correct. Proper use of a cervical dilator is usually all that is necessary. The cervical canal should always be probed to make certain that it is patent before the patient is discharged from our care.

Now that the treatment of the infected lacerated cervix is largely an office procedure, the cost of treatment to the patient is greatly reduced. The general practitioner should become more conscious of this lesion, and treat any case of it he discov-

ers. Thus not only will he relieve bothersome symptoms, but he will be playing his part in cancer prevention. This is a portion of the responsibility of every one practicing medicine. No postpartum patient should be discharged from our care until the cervix has been inspected, appropriately treated and entirely healed.

So often we see these patients who have consulted their physicians and were told to take various types of medicated douches. If one appreciates the pathology involved, it is difficult to see how the douche can serve any purpose other than washing out whatever irritating discharge has accumulated. I have never seen that douches were of any real value. Hence, use them only as a means of cleaning up the increased discharges incident to cauterization, coagulation and conization. I have noted that when sulfa cream is used as adjunctive therapy, douches are seldom necessary.

The purpose of this paper is to try and impress upon the profession in general the value of appraising this lesion from a more critical point of view. Also, the care of the lesion is now, for the most part, an office procedure that can be carried out by men in general practice, as well as by the gynecologist. Those who participate in the eradication of these lesions, are doing their part in practicing preventive therapy of cancer of the cervix.

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## HUMAN BEHAVIOUR

For this issue J. R. SAUNDERS, M.D., and THOMAS F. COATES, JR., M.D., Richmond  
Members of the Staff of Westbrook Sanatorium

### DISCUSSION OF NON-CONVULSIVE ELECTRIC SHOCK

THIS PAPER is in no wise presented as conclusive of our findings in non-convulsive shock therapy. Our purpose is to discuss some of the claims for this newer type of shock therapy and to present to you a preliminary report of our results at Westbrook Sanatorium.

Initial experiments with non-convulsive electrostimulation using the Reiter electro-stimulator were first carried out at the Norwich (Connecticut) State Hospital under the direction of Friedman and later continued at Traverse City (Michigan) State Hospital under Wilcox. Hirschfield, of the Veterans Administration Hospital at Lyons, New Jersey, has done considerable work with non-convulsive stimulation, of which he gave a very compre-

Read before the annual meeting of the Neuropsychiatric Society of Virginia, held at Westbrook Sanatorium, Richmond, October 4th.

hensive report at the annual meeting of the American Psychiatric Association, held at Detroit last May.

The diencephalon is considered the center for emotional integration and many investigators believe that certain mental disorders may be associated with dysfunction in the diencephalic area. It is thought by some that dysfunction in this area can be corrected by electric stimulation, assuming that the diencephalic area is stimulated selectively. Strong autonomic and affective responses should be expected, since within the diencephalon are located hypothalamic centers and autonomic integration.

The type of current in the Reiter equipment is unidirectional, interrupted with modulated spikes of under one thousandths of a second each.

Diencephalic stimulation is carried out on a non-convulsive basis. The technique for this type of therapy is as follows: Button electrodes the size of a quarter requiring no jelly are used. To make proper contact the electrodes are dipped in a weak bicarbonate of soda or saline solution, and applied an inch above the middle ear. Current for a period of 2 to 5 minutes, utilizes total energy of five milliamperes. Passage of this amount of current causes deep, boring pain within the head, so severe as to necessitate an anaesthetic. Just prior to the treatment we give intravenously 5 to 10 c.c. of a 5 per cent solution of sodium pentothal. Most patients awaken upon interruption of the current.

At first treatments are administered daily and subsequently reduced to two or three a week. As a rule, a series of ten to thirty treatments are given. There is no post-treatment confusion. On the contrary, the majority of patients show an increased alertness immediately following the treatment. There is no memory impairment, headache or other disagreeable sequela as seen in electric convulsive therapy.

Non-convulsive stimulation is used for the treatment of anxiety states and somatic complaints in which depression is absent or a secondary resultant. It may also be used as a preliminary to convulsive therapy when contraindications, such as a poor heart condition, require a cautious approach. Hirschfield, in his paper recently presented at the meeting of the American Psychiatric Association, concluded that non-convulsive electro-stimulation is effective in the treatment of certain anxiety states, paranoid schizophrenias and psychosomatic conditions. He maintains that this type of treatment is not all that is necessary, that psychotherapy is a very important part of the treatment, that non-convulsive electro-stimulation produces a better mental functioning so that psychotherapy can be more efficiently utilized.

Most of the patients whom we have observed during the time they were receiving non-convulsive

electro-stimulation showed strong autonomic response manifested by dilation of the pupils, flushing of the skin, moderate to profuse perspiration, and weeping in some instances. Hirschfield reports that often old traumatic experiences are brought to the surface and relived. Emotional outbursts, during which a great deal of repressed hostility is discharged, have also been observed by him. Marked emotional outburst was observed in one of our patients. Some believe that the degree of improvement depends upon the amount of autonomic response. Our experience has been too limited to substantiate this claim.

We have had no experience in the treatment of barbiturate coma with non-convulsive electro-stimulation, but it is claimed that this type of therapy is very effective in this condition. It is stated that the treatment may last as long as necessary to restore normal reflexes. Mild cases require a few minutes only; difficult cases have been treated for two hours. Respiration is restored to a reasonable depth very quickly. Those of our patients whose breathing became somewhat depressed and who had some cyanosis after receiving sodium pentothal could be immediately relieved by non-convulsive stimulation.

Since July, 1950, we have treated a total of 32 patients (17 women and 15 men), using the Reiter machine. Among these are patients with early schizophrenia, with anxiety neurosis, with conversion hysteria, with chronic (so-called deteriorated) psychoses and with agitated depression, and paranoid patients with and without deterioration. Our results so far with non-convulsive therapy have borne out the observation of others, that with this form of therapy depression becomes more pronounced. Furthermore, underlying depression not previously demonstrable clinically may be brought out. These patients become aware of feelings and conflicts and emotions which they had never before recognized in themselves. Their reactions are varied: Some demand to leave the hospital, claiming the treatment cannot help them; others exhibit violent rage reactions; still others become acutely depressed. When cases of depression are unearthed with non-convulsive therapy, it is very important to resort immediately to combined or plain convulsive therapy. After the depression disappears, you may safely resume the non-convulsive therapy. Obviously skillful psychotherapy is essential throughout the course of treatment. Ideally the therapist should be with the patient throughout the treatment and for 20 to 30 minutes afterward. Depressive reactions may be controlled by giving combined therapy as often as necessary.

To us one of the most useful and comforting advantages of this machine is the fact that with it one can effectively stimulate respiration. Thus we

may safely sedate (or even put to sleep) the extremely apprehensive patient, give him a convulsive treatment, then turn a dial and help him to breathe until he is fully recovered.

In conclusion we wish to repeat that it is not our aim to present to you any conclusive report concerning our very brief use of non-convulsive electro-shock. We hope that at some future time we may be able to give a full report on this type of therapy.

It seems, however, from reports from other sources and from our own observation, that the success of non-convulsive shock therapy depends upon a careful selection of suitable patients, proper observation of the treatment technique with adequate and skillful psychotherapy.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### GASTROINTESTINAL GAS

GASEOUS DISTENTION of the stomach and intestines may occur after operations, accidents, and serious illnesses, and also in aerophagics for no particular cause. It predisposes to respiratory complications, venous thrombosis and cardiac embarrassment. It may cause fluid, electrolyte and nutritional disturbances, and anoxemia. It may endanger intestinal and abdominal wall suture lines. To be able to prevent its occurrence is of great importance. To accomplish this, an understanding of the process is necessary.

The source of the gas is well established as predominantly atmospheric air. Swallowing is recognized as one of the chief modes of its entering the stomach, but this explanation is not adequate to cover many cases. Recently some interesting light has been cast upon the subject by Dr. W. G. Maddock<sup>1</sup> and his associates. In a series of experiments upon human subjects undergoing pyelography, they have demonstrated the passage of gas into the stomach in the absence of swallowing sufficient to account for it. Pyelography was chosen as a procedure disturbing to the patient, and in which determinations could be made satisfactorily. The explanation is that in some conditions the glottis is closed and the superior constrictor of the esophagus is relaxed, permitting aspiration of air into the stomach. This can be done voluntarily by some individuals. Under some operative conditions and in certain illnesses, relaxation of the esophageal constrictor and closure of the glottis are most likely to occur, thus permitting aspiration of air into the stomach. It naturally follows that an effective method of gastric suction is the best way of preventing gaseous distention under such conditions.

1. MADDOCK, W. G., M.D.: Gastrointestinal Gas. *Annals of Surgery*, 130:512-537, Sept., 1949.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### THE VALUE OF A PUBLIC-RELATIONS SYSTEM

DUE to a hidebound, wornout system of ethics, hospitals have suffered tremendously from public criticism. In the olden days it was not considered ethical for hospitals to advertise either through the press or by word of mouth. This custom no doubt was copied from the medical profession, and it had the highest purpose in mind when it was adopted. That purpose was to protect the public from charlatans. Times have changed, however, but both the medical and hospital world are slow to revolutionize.

The larger institutions and medical associations have come to recognize the value of maintaining good public relations. The smaller institutions and the smaller medical associations have not felt able to add this expense. It is shortsighted, however, for them to fail to appreciate the fact that good public relations are beneficial and profitable to small as well as to large hospitals. Smaller institutions could easily set aside one of the personnel who is best suited for this job, he or she giving a portion of each day to the department of public relations. While working at this interest this official could visit members of the press, invite them out to lunch, visit and take an active part in social agencies of the community, attend and support the various athletic association meetings and in general become well acquainted with the citizens of the community. He or she should be given a fairly free hand in so far as making expenditures for entertainment is concerned, of course, within a reasonable limit. The secretaries of all of the leading churches in the community should be invited occasionally, as well as other public personnel for a luncheon or dinner.

Occasional newspaper articles should appear in the paper concerning the problems of the hospital and the value of the public support. Pamphlets that are furnished by the American Hospital Association should be kept in a convenient place and it should be the public relations officer's duty to see that every patient coming in the hospital has an opportunity to see and read at least one pamphlet concerning hospitals and the public. Another very good procedure would be to have pictures made of the hospital, all sides and printed on post cards which should be stamped with a 1c stamp and made available at all times to the patients and their friends. By doing this, a picture of the hospital would be mailed out many times a day to many people in different parts of the state. By having a picture of all of the sides of



the hospital, a patient would have an opportunity to mark with an "X" a window of the room he or she occupies. Another valuable practice would be to have the public relations officer offer to make talks before the civic clubs upon newer developments in hospital services, including hospital insurance. He could also at this time pass out quite a number of pamphlets that can be obtained from the American Hospital Association and others.

If the coöperation of the dietary department can be obtained the public relations officer has another opportunity to make good contacts. When members of the profession are present, visiting patients, visiting doctors or nurses in the city, or old employees back for a short visit—any and all of these who happen to be present should be invited in for a meal. Let us not forget also the ambulance drivers coming in a cold night as well as the night policeman when a cup of hot coffee and a sandwich would make them feel that the hospital appreciates their services.

If the public relations officer is qualified for his job, he will seek the help of the professional staff in keeping him abreast of what is going on in the various societies so that if the occasion arises, before a meeting of nurses or of doctors, it can be arranged for one of the hospital's own staff to appear on the program. This will do much to focus interest on that institution. The professional staff will be rather diffident in the beginning and it will take some urging to get them started, but once a system is established other doctors and nurses will be eager to put forth an effort to appear on a program because their colleagues have already appeared, and in this case a proper professional rivalry will work out to the advantage of the hospital.

Today it is considered perfectly ethical to bring the attention of the public to the problems of the hospital, which is a public servant. It is in good taste to let the public know that good equipment and sympathetic nursing along with the first-class medical treatment is available at your hospital, and one should not feel embarrassed to cry his wares from the housetop, *provided his wares are genuine*. Contrary to the popular belief, small institutions cannot afford to be without the service of a public relations employee, even if he spends no more than half or a third of his time at this particular job. In practically every institution, there will be found someone who will take an interest in this program if given a fairly free hand in spending a small amount of money.

WHOPING COUGH in highly virulent form was found to subside within three to six days when treated in the early paroxysmal stage with Chloromycetin. In most children, the initial dose was 1 Kapsel Chloromycetin (0.25 Gm.) followed by 0.25 Gm. two to four times daily.

—E. H. Payne et al., *J. Michigan M. Soc.*, 49:450, 1950.

## HISTORIC MEDICINE

### THE FIRST PRINTED DESCRIPTION OF THE USE OF CHLOROFORM

THOSE with an interest in the historical development of diagnosis and treatment methods will be interested and instructed to know about certain facts adduced by an Australian surgeon.<sup>1</sup>

Two among the pamphlets relating to anaesthesia in the Gordon Craig Library of the Royal Australian College of Surgery are: "Notes on the Inhalation of Sulphuric Ether in the Practice of Midwifery." Edinburgh: Sutherland and Knox, 1847. 11 pages, and "Notice of a New Anaesthetic Agent as a Substitute for Sulphuric Ether in Surgery and Midwifery." Edinburgh: Sutherland and Knox, 1847. 22 pages. This latter, the first printed paper on the use of chloroform, is dated November 12th, 1847, has "proof copy" in Simpson's handwriting on the title, and a letter to Churchill on the dedication leaf. The postal date stamp is November 13th, 1847. The letter:

My dear Doctor,

I have been very busy for a week, but will send you the books and tubes in two or three days—and make you most heartily welcome to them.

What a sad fellow Lee is. I don't think there is any truth in him.

All here are quite agog with the chloroform. And certainly the results are enchanting.

I enucleated a fibrous tumour today embedded in the back wall of the uterus and weighing 2 lbs. 9 ozs. If anyone had said a fortnight ago it was possible, I would have said nay. Six or seven days ago I bored a hole through the intervening layer of uterus with potassa; and subsequently the uterus had expelled it and opened as in labour. The patient had the chloroform of course—suffered no pain and lost no blood.

Yours every,

J. Y. S.

More on the same subject in this library:

"Notes on the Anaesthetic Effects of Chloride of Hydrocarbon, Nitrate of Ethyle, Benzin, Aldehyde, and Bisulphuret of Carbon." Edinburgh: Sutherland and Knox, 1848. 7 pages.

"Answer to the Religious Objections Advanced against the Employment of Anaesthetic Agents in Midwifery and Surgery." Edinburgh: Sutherland and Knox, 1847. 23 pages.

"Remarks on the Superinduction of Anaesthesia in Natural and Morbid Parturition with Cases Illustrative of the Use and Effects of Chloroform in Obstetric Practice." Edinburgh: Sutherland and

<sup>1</sup> K. F. Russell, Melbourne, in *Australian & New Zealand J. of Surg.*, April.



Knox, 1848. 24 pages.

"Anaesthetic Midwifery: Report on its Early History and Progress." Edinburgh: Sutherland and Knox, 1848. 54 pages. This item has a letter to Dr. Churchill written on the back of the title. The postal date stamp is October 9th, 1848.

My dear Churchill,

Here is a hurried Report—which will shew you how anaesthesia progresses among us.

You had under-dosed Mrs. Lane.

I had her sister 2 or 3 hours sound asleep here, & she knew nothing of the labour.

Do come over for 48 hours & we will teach you all the secrets.

I was with Lord John Russell for an hour last night. He was anxious about O'Brien—and I have no doubt your Jury will be changed if there is a failure,  
Yours very truly,

J. Y. Simpson

"Anaesthesia in Surgery: Does it Increase or Decrease the Mortality Attendant upon Surgical Operations?" Edinburgh: Sutherland and Knox. 1848. 16 pages.

The O'Brien referred to was William Smith O'Brien (1803-1864), the Irish rebel, who was tried for treason on September 28th, 1848, and sentenced to death on October 9th, 1848. The sentence of death was subsequently commuted to transportation and O'Brien later arrived at Port Arthur, Tasmania, where he spent most of the rest of his life.

The volume is one of the treasures of the Gordon Craig Library, which, over the course of a very few years, has built up a magnificent collection of books on the historical side of medicine and surgery.

\*Later Sir James Y. Simpson, knighted for his services in introducing anesthetics.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### THE GENERAL PRACTITIONER'S PART IN THE ERADICATION OF TUBERCULOSIS

IT SEEMS TO BE A CUSTOM to believe that anything can be accomplished by the expenditure of large sums of money. Inexperienced enthusiasts have special plans they are promoting, say if the funds were available to carry it out tuberculosis would be wiped out overnight. Such statements are absurd. There is no plan, regardless of how much is spent, that will be suitable for all localities and conditions; none will bring the desired result "without the coöperation of the general practitioner."

1. S. A. Slater, Worthington, Minn., in *Jl. Lancet*, Minneapolis, April.

Thus Slater<sup>1</sup> sensibly introduces his subject. He might well have said, "without the general practitioner having chief place in the program."

Many x-ray pictures show shadows suggestive of tuberculosis in which no clinical disease is present, on the other hand, many pictures appear negative in which clinical tuberculosis is present. The x-ray survey can be made a valuable aid. There are dangers that must be eliminated if its full value is to be obtained, one of the most common being the layman's belief that if the x-ray pictures of his chest are negative, he certainly has no tuberculosis, and the other the confidence of some that they will not have it in the future. It must be strongly emphasized that while the x-ray is a valuable aid in the diagnosis of tuberculosis, a definite diagnosis should *never* be made from the x-ray alone; nor is it possible to rule out tuberculosis from the x-ray alone.

The success of an x-ray survey depends on the follow-up of all suspicious cases. The responsibility rests largely with the General Practitioner.

The tuberculin test is most valuable where the death rate is low and where there are few reactors. Mass x-ray surveys are most useful where the death rate is high and the tuberculin reactors many.

It is not a big undertaking to tuberculin test all children of school age. It is useful further in helping to find the unsuspected source of infection. Every contact should be suspected and search should be continued until the source of infection is discovered. This is the general practitioner's work and the results obtained will depend largely on him. He is the very foundation on which any plan will have to depend if it is to be a success. What can be done to insure his support and interest in this fight to eradicate tuberculosis?

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### CLINICAL EXPERIENCE WITH MERCURITAL, AN ORAL MERCURIAL DIURETIC, IN AMBULATORY PATIENTS

THE MERCURIAL DIURETICS are among our most important and reliable remedial agents. What so great an authority as Stroud<sup>1</sup> has to say will interest and profit.

Mercurital\* is a combination of mersalyl acid and theobromine calcium, the latter being marketed under the trade name, purital. The mercurial component is similar to that of other mercurial diuretics. The principal characteristic of mercurital is the combination with theobromine calcium. The fact that purital has appeared to be well tolerated as compared with other xanthine preparations suggested that it might be usable in a mercurial diuretic.

1. W. D. Stroud et al., Philadelphia, in *Penn. Med. Jl.*, Sept.

retic for oral administration. Mercurital is prepared in an uncoated tablet 60 mg. mersalyl acid, equivalent to 24 mg. mercury.

All patients, except during the occurrence of certain untoward effects, stated that they preferred mercurital to a diuretic by injection. Preference was based chiefly on the avoidance of profuse diuresis. There were no instances of the patient being awakened by nocturia due to the drug. None of the patients noted any of the distressing symptoms which often accompany sudden marked loss of fluid. All patients were instructed to take the tablet with meals to minimize nausea. Some patients took them on an empty stomach, apparently without ill effect. No evidence of renal damage or impairment of function due to mercury was detected, nor were there any acute reactions such as occasionally occur when the mercurial diuretics are given by injection.

Mercurital was administered for periods of one to eight months to a series of ambulatory patients who previously required one or two weekly injections of a parenteral mercurial diuretic for the control of congestive heart failure.

Mercurital, given in dosage of one to three tablets daily, was found to be as effective as the parenteral preparations in the prevention and control of congestive failure in ambulatory patients.

Although gastric irritation and nausea appeared to be minimized, mercurital, like other oral preparations, caused soreness of the gums and abdominal cramps and diarrhea in six of the present series, all of whom were taking two or more tablets daily. These occurrences prohibited further use of the drug in four of these patients and the remainder were adequately controlled by temporary withdrawal of the drug, reduction of dosage and improvement in oral hygiene.

The use of mercurital appears to be preferable to the parenteral administration of mercurial diuretics for ambulatory patients in the absence of individual susceptibility to complicating stomatitis and intestinal disorders.

\*Mercurital used in this study was generously supplied by the A. J. Parker Company, Philadelphia.

#### KHELLIN IN BRONCHIAL ASTHMA

In the past year Major has<sup>1</sup> studied the effectiveness of a new drug in the treatment of asthma. This is khellin or khellinin, the active principle from the seeds of the plant, *Ammi visnaga*, known in Arabic as "Khella," which grows wild in the Mediterranean area and in Arabia. Extracts of its dried seeds have been used since ancient times by the people of these areas as an antispasmodic in renal colic and ureteral spasm.

Khellin was first prepared in an impure form in 1879. Samaan, in 1932, studied the pharmacological action of khellin and found that it relaxes all

1. R. H. Major, Kansas City, Kansas, in *Jour. Kansas Med. Soc.*, March.

the visceral smooth muscles by direct action on the muscle fibers.

In 1945, Anrep and his associates reported some careful physiologic experiments and found that it produced a great increase in the coronary blood flow. They then treated 38 patients suffering from angina pectoris, reporting 28 good responses, seven moderate, and three with no beneficial effects. The drug was administered both by mouth and intramuscularly.

In 1947, Anrep and his associates reported a series of asthmatic patients treated with khellin. In 41 out of 45 patients, complete and prolonged relief followed a single intramuscular injection of 200-300 mg. Repeated daily administration of khellin by injection or by mouth conspicuously reduced the number and the severity of the attacks. The authors point out that the action of khellin in bronchial asthma is not so prompt as that of adrenaline or of ephedrine but it is more lasting, and, since it has no effect on the systemic blood pressure, it can be safely administered.

From the Department of Internal Medicine, University of Kansas School of Medicine.

## OBSTETRICS

H. J. LANGSTON, M.D., Editor, Danville, Va.

### MATERNAL PULMONARY EMBOLISM BY AMNIOTIC FLUID

IT IS ENTIRELY POSSIBLE that a good many unexplained sudden deaths in or shortly after labor are due to embolism from amniotic fluid. In some such cases the medical attendant could save himself from unjust blame by insisting on a necropsy.

Maternal pulmonary embolism by amniotic fluid was first reported in 1941, in a study based on eight cases in human beings. In the following year two additional cases were added by the first reporters. The total number of cases reported up to the time of this writing is 17. We present three additional cases.

A tentative incidence is stated as 1:8000 deliveries.

The patient is generally a multipara. The prenatal course is uneventful, usually no complications occur before labor starts; in many cases pregnancy has lasted beyond term; in any case the fetus is larger than normal.

Uterine contractions are hard, violent or tetanoid. The signs and symptoms begin during or shortly after labor: chilliness, b. p. to shock levels, restive-anxiety, dyspnea and cyanosis. Response to treatment is poor, with death in a matter of minutes or hours. The fetus is usually stillborn or dies shortly after birth.

1. G. K. Mallory et al., Boston, in *New Eng. J. of Med.*, Oct. 19.

Cases of this disorder have not been recognized prior to death and autopsy; consequently there is no report of one successfully treated. In the cases of massive embolism causing anoxia on a mechanical basis, it is unlikely that a satisfactory form of treatment can be devised. Conceivably, patients in borderline cases might be saved by supportive measures and oxygen. Logical prophylaxis is not to induce violent labor by pituitrin or early rupture of the membranes and to prevent violent labor in elderly multiparas.

This syndrome is a little-recognized complication of labor and the early puerperium. As in other reported cases, these three cases occurred in the older multiparas. The characteristic course is initiated by violent uterine contractions after which the patient becomes dyspneic and cyanotic, goes into shock and usually dies in less than an hour. Although a clinical diagnosis has rarely if ever been made, such a diagnosis should be possible by those familiar with the syndrome. The diagnosis is made pathologically by the finding of formed elements of amniotic fluid in the pulmonary arterioles and alveolar capillaries.

## DENTISTRY

J. H. GUION, D.D.S., Editor, Charlotte, N. C.

### ORAL PATHOLOGY IN CHILDREN

AN ORAL SURGEON'S<sup>1</sup> presentation of disease conditions in children which come into the hands of the dental surgeon is given in brief.

There are only a few occasions when the advice of the dental surgeon is sought in connection with the newborn. It is a red-letter day when we are asked to see an infant born with teeth. Louis XIV. Mirabeau, the anatomist Broca and Curius the defearer of Pyrrhus, to mention only a few, showed this abnormality. The prematurely erupted teeth should be extracted. Recently the mother of such a patient did not wish the teeth to be removed; within three weeks there was a lingual ulcer and the tongue had so pressed upon the teeth that they became loose and were ultimately picked out with dressing forceps. This is not always the course. In one family three generations have shown this condition.

Another condition for which the paediatrician seeks early dental help is *micrognathia*. Because the infant's jaw is so small the tongue is forced to occupy part of the pharyngeal space and there are signs of respiratory obstruction. The mandible must be brought forward by means of a submandibular sling attached over the head. Each dentist who treats these children devises his own appli-

ance. A recent suggestion is that the jaw should be kept forward by a weight acting over a pulley. This is claimed to be eminently successful, but the ingenuity of most dentists can overcome the problem in a less drastic way.

In former days the dentist's help was sought in the very early treatment of *cleft palate* and within a few days of birth the infant was using a suckling plate. The spread of the present trend in one or two centres of cleft-palate surgery to delay operation till a much later age than at present may relieve the demand for this appliance.

Congenital defects of the *tongue* are not common. In former days the fear for a tongue-tied infant was considerable. In the few cases observed where this abnormal fraenum had been left uncut there seemed to be no ill-effects.

The dentist is usually troubled by *teething* only in his role as a family man. Local penicillin would be helpful for those children whose gums become ulcerated and inflamed. The ideal would appear to be a penicillin lollipop but attempts to get manufacturers to make one have been unsuccessful. I have made lollipops by freezing penicillin solution flavoured with peppermint around a stick. They are pleasant to suck but they melt rather quickly once outside the refrigerator.

One sees every now and again the child with yellow teeth who has had icterus neonatorum.

*Dental caries* is one of the commonest diseases of children. A number of children have active caries on the labial surface of the upper central incisors before they are a year old, but many children lose their incisor teeth before all the temporary teeth have erupted. Some children are wearing dentures at the age of three years; it was hoped that ammonium-ion tooth powder was going to help these children but the results have been disappointing.

Oral aphthous ulcers occur frequently in children. In one baby of two years there was a familial element, and his brother, mother and maternal grandmother all suffered from recurrent aphthous ulceration. The antihistamines give good results in the majority of cases of the recurrent type.

The oral stigmata in congenital *syphilis* do not require mention here but as members of this section we should remember that it was at a meeting of the Odontological Society that Sir Jonathan Hutchinson read his famous paper describing for the first time the teeth which bear his name.

The commonest *swelling* of the jaw is the abscess. An abscess of the mandibular first molar occasionally progresses to osteomyelitis of the mandible. Penicillin has altered the whole outlook towards this disease. Cysts cause a centrally expanding tumour of the jaw; it is surprising how frequently a badly depressed but vertically placed tooth will erupt with good position once the cyst

1. Prof. J. Boyes, in *Proc. Royal Society of Med. (London)*, July.



has been opened up. The traumatic cyst is without epithelial lining. It is the result of irritation and resorption of an intraosseous haematoma and to open it is to cure it.

The appearance radiologically of bone destruction not related to the apices of teeth usually means *malignant neoplasm*. In view of the variation in sensitivity to radiotherapy a biopsy should be performed to ascertain the best line of treatment. Recently a clinical sarcoma was proved histologically to be a plasmocytoma and vanished under deep x-ray therapy. A girl aged 14 had a swelling in the palate related to a badly broken-down upper first molar. The diagnosis of abscess seemed obvious and there was an area of rarefaction on the radiograph. Ten days after extraction a biopsy was performed and the histological diagnosis was osteoclastoma.

A word or two about three general conditions of great dental importance—haemophilia, congenital and acquired heart disease and bronchiectasis. A register is to be kept of all patients in this group; by a system of three-monthly recall caries is kept under control and the oral hygiene is supervised, and the need for extractions for children with haemophilia and heart disease, with their anxieties, no longer arises.

*Editor's Note.*—Evidently this Britisher is with those who discredit Shakespeare that King Richard III. was born with teeth:

King Henry VI.:

"Teeth hadst thou in thy head when thou wast born,  
To signify thou camest to bite the world."

King Richard III.:

"The midwife wondered and the women cried  
'O, Jesus, bless us, he is born with teeth!'  
And so I was; which plainly signified  
That I should snarl and bite, and play the dog."

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### THE MANAGEMENT OF VAGINAL DISCHARGE

THE DIAGNOSIS and management of vaginal discharge constitutes a common office procedure. While there are many causes for leukorrheas, *Trichomonas vaginalis*, monilia, condyloma acuminata and chronic cervicitis are instructively discussed by Reich and Nechtow, Chicago, in a recent issue of *General Practice Clinics*. To the man in general practice, their presentation should be practical and helpful.

*Trichomonas vaginalis* is a common cause for vaginal discharge. At the Cook County Hospital Gynecologic Clinic 25 per cent of all cases of vaginitis are of this type. The common symptoms are

pruritus, soreness and acquired dyspareunia. The hanging drop confirms the diagnosis. The management is prophylactic and active. The patient is taught proper toilet hygiene, to avoid handling of the vagina with unclean hands and not to use the enema tip for douching unless it is boiled. The vagina is washed with liquid detergent (P. D. & Co.) and insufflation of 2 to 4 Gm. of Argypulvis (A. C. Barnes & Co.) is carried out. At home the patient takes an acidifying douche (2 tablespoons of white vinegar to 2 qts. of warm water) and then she inserts an Argypulvis capsule.

Monilia or yeast vaginitis constitutes 8 to 12 per cent of our cases of vaginal discharges. It is frequently seen during pregnancy and diabetes because of increase in glycogen in the vaginal mucosa. The diagnosis is made on a hanging drop. The vagina is washed the same as in trichomonas, then painted with an aqueous mixture of 1 per cent of acriflavin and 1 per cent gentian violet. The patient takes a sodium bicarbonate douche (2 tablespoons to 2 qts. warm water). The treatment is carried out during pregnancy, too.

Condyloma acuminata is not so common. Treatment consists of applying a hydrosorb base ointment containing 25 per cent podophyllin. The normal surrounding tissue is protected with vaseline, zinc oxide ointment or collodion. The podophyllin must be washed off with soap and water four to six hours after the application.

Chronic cervicitis is a frequent cause of leukorrhea. A routine cytologic study or a biopsy should be done for a possible carcinoma. Electrocautery is employed to destroy the endocervical epithelium and hyperplastic glands and the ectropion. Both are done at one sitting. Cherry-red heat should be used, and subsequently the canal must be dilated weekly for five or six weeks to prevent a possible stenosis.

### SIGNIFICANCE OF RH NEGATIVE BLOOD (Maternity Center Assoc. Briefs)

Rh-negative blood is not a disease but is a bodily variation. Just as some have blue eyes and some have brown, some have blond hair and some black, some have Rh-positive blood and some have Rh-negative blood.

In 13% of all marriages the woman is Rh-negative and the husband is Rh-positive. It is among these couples that Rh incompatibility arises.

Erythroblastosis in the baby (that is, the destruction of the baby's red blood cells by the antibodies in the mother's blood stream), arises in one out of every 200 pregnancies at full term, and one out of 26 pregnancies for those 13% of couples whose blood in incompatible.

Most Rh-negative women can have two or more babies before the antibodies in their blood are strong enough to destroy their babies' blood cells and cause erythroblastosis; so few Rh-negative mothers will ever have difficulty because most American families are small.



## PRESIDENT'S PAGE

### ARE THERE TOO MANY MEDICAL ASSOCIATIONS?

DUE ACKNOWLEDGMENT is made that there are two sides to every question and the question proposed in the title of this article has its two sides. Upon analyzing this question, however, one realizes that it is necessary to specify what is meant by a medical association. There are medical organizations that meet once a week, others meet every other week, still others meet monthly, quarterly, semi-annually or annually. Some are purely scientific, some are both social and scientific and some are almost entirely social, the scientific part being so dwarfed that it is almost valueless to the profession. Some are concerned only with different medical or surgical specialties. Some pay a great deal of attention to politics, to the neglect of professional matters. One sees, therefore, that there are so many different types of medical organizations that hardly a doctor is to be found who will be interested in all of them simply because they are called medical organizations. The most valuable type of medical association is one that puts first and foremost a program that is practical as well as scientific and one that also sets aside some part of its meetings for social contact and enjoyment.

The Tri-State Medical Association is proud of the fact that it ranks as A-1 when compared with all other associations for usefulness to the private practitioner of medicine. It is particularly interested in those phases of the practice of medicine which make new knowledge available to the largest number of private practitioners, and in turn to the largest number of their patients. In the Tri-State Medical Association, you will find that the patients' needs are studied and their problems solved by the private practicing physicians in such a way that no one will be denied the benefits of the progress of medical science and art. You will find that this association offers opportunity for social contact and enjoyment not only between the members but by the families of its members. Therefore, when one asks the question, "Are there too many medical associations?," the answer is an emphatic "No"—not if they are like the Tri-State Medical Association of the Carolinas and Virginia.

—R. B. DAVIS.

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*As is true of most Medical Journals, all costs of cuts, must be borne by the author.*

## Space Available on Tri-State Program

IN its history of fifty-two years the meetings of the Tri-State Medical Association of the Carolinas and Virginia held in Columbia have always been enthusiastic, largely attended and of the first rank in every way.

The present secretary was elected there in the meeting of 1927, the year in which that great medical educator, that great doctor, that great man—Dr. Robert Wilson—was elected president.

The secretary has just returned from Columbia where was held a conference of Tri-State officers, to discuss and promote arrangements for the meeting of the Association to be held in that good city next February. It seems that we have never held a meeting at the Columbia Hotel. The architectural plan of that hotel seems the best for a meeting such as ours of any of the caravanseries in our three States.

We had been extended an invitation to participate in the meeting for the evening of November 13th of the Columbia Medical Society, and there we enjoyed an excellent dinner and program and other hospitality for which South Carolinians have always been famous.

The program has shaped up well as to features which were settled on to be prearranged. There remains place for a number of presentations by Fellows of the Association who wish to present subjects which they for any reason believe to be specially important and timely. Those who appear on the program in this meeting are assured an attentive hearing and later a serious judicious reading.

Applications for place can be accepted only in order of their coming in. Please have no hesitancy in sending in such application to the secretary with approximate title, exact title to be decided on and supplied later by the essayist.

## VISIT AND EXAMINE THE PATIENT, THEN DECIDE ON PREMEDICATION AND CHOICE OF ANESTHESIA

HE WANTS TO KNOW what is going to be done; how long is he going to be asleep?; how much is it going to hurt or distress him?; how is he going to feel afterward? The patient will not ask to see the anesthetist if he does not appear, because he does not want to seem apprehensive; but he will greatly appreciate a visit from the anesthetist.

This from a sensible man<sup>1</sup> who has got to be an anesthetist. And he goes on in the same sensible vein.

The most commonly employed anesthesia for infants and children is open drop ether, or ether in-

1. J. B. Dillon, Univ. of So. Calif., in *Arizona Med.*, Oct.

sufflation with air as the vehicle. Administration can be improved by supplementing the ether-air mixture with O in the open-drop technique, or by substituting O for air in the insufflation techniques.

Ether anesthesia for children is usually induced with Divinyl ether or ethyl chloride because of their rapid action. Oxygen should be used with these drugs.

Rectal pentothal, plus nitrous oxide-O (the 0% kept above 20) can be employed for infants and children, particularly in othop., neuro. and plastic surgery. Rectal pentothal, plus topical anesthesia, can be well used for eye surgery.

Cyclopropane is mandatory for the induction of cases with tetralogy of Fallot operations—rapid induction with high O% of the inspired gases.

With proper premedication, spinal and regional anesthesia for surgery on children is entirely practicable. Great care is used not to use toxic quantities of drug or excessive concentrations. One-half per cent procaine solutions for regional is adequate. One mg. of procaine for every one kg. of body weight is adequate for spinal, and the spinal drug should be diluted to not more than 2% with spinal fluid before injection.

If endotracheal anesthesia is chosen, insure against too large a tube or trauma from rough technique.

During prolonged anesthesia careful watch should be kept on the rectal t. alterations in either direction from normal, and any great change be corrected.

*For adults under no circumstances should a patient be given an anesthetic he does not want, particularly a spinal anesthetic.*

The majority of patients are perfectly able to take any of a variety of anesthetics, but it is essential that an assay be made before any patient is anesthetized by any agent and method.

Spinal anesthesia should not be used for the shocked patient or one who is prone to go into shock yet who must receive surgery. Cyclopropane is second choice; IV morphine or demerol and nitrous oxide-O may be employed, using a minimum of pentothal.

Ascertain low long before injury or the onset of the acute process the patient had food; gastric function stops after severe injury or with severe acute pain. The stomach must be emptied of undigested food. More tragedies have occurred from the vomiting of food by emergency patients during some phase of an inhalation anesthetic from aspiration of stomach contents into the lungs than from any other factor of anesthesia.

The anesthetist should not attempt methods with which he is unfamiliar.

The aged patient has lost a large part of respiratory and vascular adaptability. Regional anesthesia

with light sedation can be used for many procedures. Nitrous oxide-O and very small doses of demerol intravenously provide excellent anesthesia in many cases. Spinal anesthesia, if a unilateral type can be used, is very satisfactory, particularly for fractured hips. Deep anesthesia should be avoided. Small doses of curare insure adequate relaxation with very light general anesthesia.

#### REASON AS TO LABORATORY TESTS

A ROUTINE PROCEDURE which will provide the physician with all the laboratory information he needs in most cases is to order a complete blood count, a urinalysis and a Kahn or Kline test, says Kent.<sup>1</sup> The Kahn or Kline is selected over the Kolmer or Wassermann as less expensive. The sedimentation rate may be routine.

And he goes on:

The policy of ordering "agglutination tests" for a patient with fever, vague complaints and leukopenia is to be condemned. Between the possibility of typhoid fever, influenza, tuberculosis, undulant fever and other conditions, the doctor should be able to narrow the agglutination tests down to the one indicated.

In case the blood reveals immature cells with a normal or somewhat elevated total white blood count, before excising a lymph node for histologic study on the basis of leukemia or Hodgkin's disease, study the patient further. If the illness is acute or subacute and if it started with an ordinary upper-respiratory infection the simple inexpensive Paul Bunell test will establish the diagnosis of infectious mononucleosis. If this is not indicated, supportive measures are in order and the white count and differential can be repeated at monthly intervals which in the average case will be sufficient to prove or disprove leukemia, and there is still adequate time to excise a lymph node for the exclusion of Hodgkin's disease.

In the acute cardiac case that is probably a coronary occlusion nothing can be gained by immediately ordering and ecg. since any changes capable of being shown on the record take a number of days to develop. If convinced, or even suspicious of occlusion, it is more sensible to keep the patient in bed and treat him symptomatically and defer the ecg. for a week. If the patient then shows evidence of coronary occlusion, the laboratory tests needed are more or less contingent upon the type of treatment. The only two tests indicated in the usual case are the sed. rate and the white blood count and differential, both of which will give considerable information as to progress. Since these changes are slow, the patient's money should be conserved and tests ordered not oftener than once a week. While treating patients with heparin or

<sup>1</sup> C. F. Kent, Kansas City, Mo., in *Jl. Mo. Med. Assn.*, 45: 902.

Dicumarol frequent prothrombin estimations and tests for blood in the urine are necessary as a guide to dosage. Hospital bed shortage often prohibits such management. Also, having the laboratory send to the home daily for a month to obtain specimens is expensive. The physician should obtain the specimens and take to his office where they may be picked up on routine trips.

The liver function test in best repute is Hanger's cephalin flocculation test. It is simple and is applicable to jaundiced and non-jaundiced individuals. However, in the presence of jaundice more information can be obtained from the blood cholesterol-cholesterol ester determinations along with the icteric index. Do not expect rapid changes in the icteric index. One such test every week or every two weeks is more economical and every bit as informative as the frequently misordered daily tests.

Autogenous and stock vaccines have a place, but careful selection, both of patients and bacteria used, must be done. They are particularly useful in certain skin conditions wherein other causes such as fungi and contact factors have been ruled out, and where a strongly hemolytic staphylococcus or streptococcus has been grown from the lesions.

There are many sources of error in the basal metabolism test. No conversation should be permitted in the room. A blood cholesterol determination should be made also, and if the two do not agree, either trust the cholesterol reading or repeat the basal metabolism on another day.

#### HEMORRHOIDECTOMY—A NEWER AND BETTER WAY

WHAT BLOOMENTHAL<sup>1</sup> has to say about his operative treatment of hemorrhoids will be welcomed by many.

After caudal transsacral anesthesia, the patient is placed on the table prone, and middle of the table elevated so that the patient is moderately jack-knifed. The buttocks are retracted with wide strips of adhesive which is fastened to the side of the operating table. Relaxation afforded by caudal transsacral anesthesia allows adequate exposure of the anal canal without divulsion of the sphincter fibers.

The number and extent of hemorrhoidal masses are noted and the operation planned to excise these masses through *radial* incisions and still leave an adequate bridge of mucosa and skin between sites of excision. A curved hemostat grasps the most inward aspect of the hemorrhoidal mass, a catgut suture is placed at this point and tied, ends left long. A *V* incision is made in the skin excising the external hemorrhoid, and continuing to the mucocutaneous juncture until the external anal sphincter is clearly exposed as it is free from the hem-

orrhoidal mass. The lines of incision are extended inwardly to the previously placed guide suture, which marks the base of the hemorrhoidal mass. The internal mass is dissected free until it is  $\frac{1}{4}$  in. from the guide suture. The long ends of the guide suture are then used to ligate the hemorrhoidal mass at its base and the mass is excised above the ligature. The lateral mucosal borders of this radial incision are elevated and any remaining venous tissue is removed from under the mucosa.

The procedure leaves a clean radial area, the external anal sphincter clearly exposed and easily palpable. A blunt curved clamp is inserted gently beneath the inner circumference of the external anal sphincter in order to elevate the sphincter. The sphincter is then injected with 1 c.c. nupercain in oil; there is no possibility of the oil entering any tissue except the muscle itself.

The remaining hemorrhoidal masses together with their redundant mucosa are excised through radial slits as described and the sphincter injected with nupercain at each site. One-quarter in. of intervening bridge of mucosa and skin is always left between excisions to prevent subsequent stricture formation. No sutures are placed to close the gaps in skin and mucosa and these are left to granulate in and epithelize. Hemostasis is obtained by the suture at the base of the hemorrhoid and by catgut ligation of any bleeding vessels.

No material is introduced into the rectum for packing or drainage. By placing an inverted cone of gauze dressing in the intergluteal fold and then firmly apposing the buttocks by adhesive strapping, postoperative oozing is controlled.

Patients are hospitalized usually for four days. Opiates are given q. 4 h. p.r.n. first 24 hours, but few patients need this medication. Barbiturates are given for sleep. Full diet as tolerated is instituted *immediately* after operation. After 24 hours dressings are removed and, while the patient is awake, hot wet compresses applied q. 2 h. After 36 h. vegetable demulcents or mineral oil are given to produce a soft, bulky stool. On the 2nd or 3rd day, patients are ambulatory and take hot sitz baths, three or four daily. They are encouraged to move their bowels and if not by the 4th day, 4 ozs. of oil are instilled through a soft rubber catheter and followed by a pint of lukewarm tap water. The anus is dilated digitally before the patient leaves the hospital and weekly thereafter until healing is complete.

A series of 106 cases treated is presented. The open technique allows complete and radical excision of the hemorrhoids as well as direct injection of the sphincter. Postoperative sphincter spasm is done away with.

There have been no recurrences and complications have been confined to one postoperative hemorrhage and one postoperative fistula-in-ano.

1. F. D. Bloomenthal & R. M. Bendix, Chicago, in *Ill. Med. J.*, Nov., 1949.



## THE ANCIENT INDIAN METHOD OF CONVERTING MERCURY INTO ACTUAL GOLD

READ the following extracts from an article<sup>1</sup> in an Indian medical journal of large circulation, and then think whether or not these people are capable of self-government, whether Britain was a despoiler or a benefactor of India.

When the Chopra Committee visited Mysore, to take evidence of Ayurveda as a system of Indigenous Medicine, His Holiness Shree Swamy Vaidyanathendra Bharati, demonstrated to the committee the science of Levitation of heavy Metals on water.

In 1947 it was reported in the April issue of the Official Organ of the All India Ayurvedic Congress, that Pandit Krishnapal Shastri of Benares demonstrated before the late Mahadeb Bhai, Desai, the Secretary of Mahatma Gandhi, by converting mercury into gold. For a second time he demonstrated in 1947 in the Birla House in the presence of Sait Jugal Kishore Biala and a number of prominent other people by converting 36 pounds of metallic mercury into gold which was after all critical evaluation auctioned and sold away for Rs. 75,000\* and the amount was given over on the spot in charity. Thus the manufacture of gold from mercury is no longer a myth or fiction and that it is a solid fact was proved to the hilt.

On enquiry we learnt from Kaviraj Pratap Sinha, the principal of the Ayurvedic College, Benares Hindu University, that after the demise of Pundit Krishnapal Shastri, his brother also was not seen and no information was available about his whereabouts. We were at the same time told that the demonstration of manufacture of gold from mercury was a fact and that he witnessed the demonstration.

We are now afraid that the whole of the investigation, experience and learning of this extremely useful art and science was miserably lost to us.

Instead of these sporadic private and individual efforts, it would be appropriate, even expedient, that the Benares Hindu University itself take up the matter and accommodate the experiments on Dhātu Vada and allied Sciences, inviting, if necessary, experts like His Holiness Shree Charan Theertha Maharaj and others, creating scholarships and fellowships in Ayurveda and Indian Sciences. For doing this we exhort with all our strength Sir Pratap Sinha to take the matter up immediately with the Rector and authorities of the University.

It will be very interesting to learn that the Rudhi Khanda—Vaada Khanda since published by the Rasa Shala, Gondal, contains a number of very valuable prescriptions for not only manufacturing gold from lead and copper but also the manufac-

ture of artificial Gems like the Diamond, the Ruby, the Sapphyre, the Topaz, the Emerald etc.

It becomes the most ardent duty of every Indian citizen and the India and the Provincial State Governments to offer every kind of financial and other support for research in all branches of Indology, and additionally adequate personal and institutional protections to the investigators and researchers in these subjects against perils from professional and other jealousies, so as to prevent the loss of person and property and learning and culture to the nation by the sudden and tragic death and other kinds of disappearance of individual workers.

Benares is the holy city of the Hindus ranking in the affection and reverence of the Hindus as Mecca does for the Moslems. The modern temples number more than 1500. The Gauges here is generally crowded with worshippers, come to wash away their sins in the sacred river of the Hindus, "and among them constantly rises the smoke of funeral pyres, for to the pious Hindu, death on the bank of the stream is the door to salvation." "Here are large numbers of Brahmins of noted sanctity and learning, to whose feet flock disciples from all over India, and who make Benares the most famous center of Sankritic studies."

This is the grade of intelligence of the most learned and advanced of the peoples deemed by the combination of hysteria and ignorance which characterizes our Government at Washington capable of self-government; which has forced the United States out of the Philippines, Britain out of India and Holland out of the East Indies, and is now demanding that France get out of Indo-China.

And with the result that any high-school child with a fair knowledge of history and human nature could have anticipated—every one of these peoples siding with Russia in her scheme for enslaving the world.

## FAINTS AND FITS

(Sir Charles Symonds, in *Proc. Royal Society of Medicine* (London), July)

As an example of the manner in which a single visceral symptom of epilepsy may vary in duration subternal pain is cited.

A man began to have attacks at 29 and had half a dozen in the next five years. There was a sudden onset of "vice-like" pain between chest and back, which rapidly increased in severity and after a few seconds unconsciousness supervened for five minutes. In one attack he bit his tongue. On two occasions an abnormality in the ECG was found, indicating a long-standing benign lesion of the left hemisphere.

A woman, 37, who had previously suffered from migraine, had her first epileptic attack while at a theatre. It was preceded for an hour by a pain in her chest. She then told her husband she was going to faint and had a fit in which she bit her tongue and passed water. On a subsequent occasion she experienced subternal pain all day, then felt a sudden rush from her stomach to her head (an epigastric aura) and had a fit.

\*Some \$30,000

1. S. V. N. Bharathi, Director, Cultural Heritage, Mysore, in *Indiana Medical Record*, Jan., 1950.

## NEWS

### UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE

Dr. Edwin Boyle has been awarded a postdoctoral fellowship by the National Institute of Health for studies on the ultracentrifugal analysis of the blood in patients with atherosclerosis under the direction of Dr. William Parson, Professor of Medicine, and Dr. Jesse Beams, Professor of Physics.

Dr. Walter O. Klingman, Associate Professor of Neurology and Psychiatry, has been appointed a member of the Board of Chief Consultants to the Medical Director of the Veterans Administration, representing the field of neurology.

Two series of twelve weekly lectures for students and faculty have been arranged for the current academic year. Guest lecturers participating in the fall series are: Dr. Allen O. Whipple, Clinical Director of the Memorial Hospital; Col. John R. Wood, Chairman, Medical Research and Development Board, U. S. Army; Dr. DeWitt Stetten, Jr., Chief, Division of Nutrition and Physiology, The Public Health Research Institute of New York; Dr. Hudson Hoagland, Executive Director, The Worcester Foundation for Experimental Biology; Dr. Earl T. Engle, Professor of Anatomy, Columbia University; Dr. C. P. Rhoads, Director, Memorial Hospital and Sloan-Kettering Institute for Cancer Research; Dr. W. C. Hueper, Cancer Control Branch, U. S. Public Health Service; Dr. Shields Warren, Director, Division of Biology and Medicine, U. S. Atomic Energy Commission; Dr. Chester Jones, Attending Physician, Massachusetts General Hospital; Dr. Robert S. Palmer, Attending Physician, Massachusetts General Hospital; Dr. Joseph E. Moore, Associate Professor of Medicine, The Johns Hopkins School of Medicine; Dr. John H. Gibbon, Jr., Director of Surgical Research, The Jefferson Medical College.

Dr. Palmer's lecture, "The Rationale of Current Therapy for Essential Hypertension," is the first annual Staige D. Blackford Memorial Lecture, established in memory of the late Dr. Blackford by his friends and colleagues. Other lectures in the series are financed by the University, Alpha Omega Alpha and Phi Beta Pi.

Dr. Joseph F. A. McManus, Associate Professor of Pathology, has been awarded a grant by the National Institute of Health for histochemical studies on inflammation and repair.

The Children's Service Center, established in 1948 as a child guidance clinic under the direction of Dr. Frank J. Curran, Associate Professor of Neurology and Psychiatry, has moved from the University Hospital to larger quarters in the neighborhood. The Center has a staff of ten and is providing a useful service to the community as well as in the instruction of medical students.

### CENTURY-OLD MEDICAL ASSOCIATION HOLDS MEET

Grateful acknowledgement is made of receipt of the following invitation:

1848-1950

You are cordially invited to attend the Annual Meeting of the Pee Dee Medical Association to be held at the Country Club in Florence on Thursday, October 26, at 7:30 P. M.

Program:

"Vaginal Discharge"

Dr. J. A. Busbabe, Washington, D. C.

"Surgical Lesions of the Lower Bowel"

Dr. Wm. W. Chase, Washington, D. C.

—J. M. N.

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DANIEL B. MIZELL, D.D.S., F.I.C.D., announces the association of JOHN W. GIBBS, D.D.S., in the practice of Periodontia, Oral Diagnosis and Dental Radiography, 215 Professional Building, Charlotte, North Carolina.

#### DIED

Dr. H. Stokes Munroe, Jr., accomplished young surgeon, died in Pennsylvania Hospital October 29th. He had been a patient in Philadelphia for the last several weeks. Death was attributed to cardiac failure. He was 41 years old.

He is survived by his wife, the former Martha Matthews; three children, Martha Matthews Munroe, Marshall Page Munroe, and Ann Cameron Munroe; his father, Dr. H. Stokes Munroe, Sr.; a brother, Dr. Colin Munroe; and two sisters, Mrs. Frank Armstead and Mrs. Walter K. Covington.

Dr. Munroe's health began to fail more than a year ago. Recently he had shown some improvement and his death came as a great shock.

Following his graduation from the McCallie School, Chattanooga, and later from Davidson College, where he was class valedictorian and a Phi Beta Kappa, Dr. Munroe entered Duke University, obtaining his M.D. degree there in 1931. Subsequently he was a resident in surgery at Duke Hospital, later going to the Lahey Clinic, Boston, as a fellow in surgery.

Dr. Munroe returned to Charlotte in 1940 to practice surgery, opening his offices in association with his father in the Professional Building, practicing at all the Charlotte hospitals, and soon became recognized as a young surgeon of exceptional ability.

When World War II broke out, Dr. Munroe was one of the organizers of the 38th Evacuation Hospital Unit and served overseas with it for three years, attaining the rank of Major.

Dr. Munroe, a learner throughout his life, was a Fellow of the American College of Surgeons, diplomate of the American Board of Surgeons, member of the Southeastern Surgical Congress, the American Medical Association, the Mecklenburg Medical Society, the N. C. State Medical Society, the Tri-State Medical Association of the Carolinas and Virginia, Alpha Omega Alpha, honorary medical fraternity, Sigma Alpha Epsilon, social fraternity, and the Charlotte Kiwanis Club.

Dr. James B. Murphy, 66, a cancer research resident scientist at Jackson Memorial Laboratory, Bar Harbor, Maine, died August 24th.

A native of Morganton, N. C., Dr. Murphy was graduated by the University of North Carolina and Johns Hopkins University. After study abroad, he served as an Army Medical Corps major in World War I.

Dr. Murphy was vice-president and former president of Bar Harbor's Mount Desert Hospital, where he died.

#### PHYSOSTIGMINE IN THE TREATMENT OF THE BLACK WIDOW SPIDER BITE

(O. R. Holloway, Morrilton, in *Jl. Ark. Med. Soc.*, Sept.)

A popular treatment is IV injection of 10 to 20 c.c. of calcium gluconate solution rapidly, this followed with IM injection of horse serum and 1 to 2 units of Latrodectus Mactans antivenin after intolerance has been ruled out. If required, additional calcium gluconate is given after five or six hours.

Two cases were treated successfully with a combination of physostigmine and atropine.\* Both were relieved 10 to 15 minutes after administration of Phyatromine (R). In one case  $\frac{1}{4}$  gr. of morphine was given simultaneously.

Man, 28, bitten two hours before, writhing in pain on the floor, abdominal muscles in knots, difficult breathing; t. 102, p. 122, r. 28. He was given a deep IM injection of 1.5 c.c. Phyatromine (R) plus  $\frac{1}{4}$  gr. morphine. Ten minutes later he began to relax and in another five was completely relaxed and smoked a few puffs of a cigarette. Further treatment consisted of relieving him of his toxicity. He recovered completely without residuum.

A man, 20, seen two hours after the bite occurred, symptoms similar to first. He was given 2 c.c. Phyatromine (R) only. In 15 min. the muscular spasm was relaxed.

\*A stabilized solution of physostigmine salicylate and atropine sulfate, marketed under the name Phyatromine (R), by *Kremers-Urban Co., Milwaukee, Wisconsin.*

AT THE BOSTON CHILDREN'S HOSPITAL recently 3½ per cent of autopsies have demonstrated malignant tumors.

—J. B. Richmond, in *Ill. Med. Jl.*, Oct.

#### WANTED

Resident psychiatrist, Graduate of Class A medical school and with adequate hospital training for work in private mental institution located in ideal climate. Excellent salary and maintenance. If interested in employment under excellent conditions near thriving Southern city, apply immediately to Orin R. Yost, M. D., Psychiatrist-in-Chief, Edgewood Sanitarium Foundation, Orangeburg, South Carolina.

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## BOOKS

**DIFFERENTIAL DIAGNOSIS OF INTERNAL DISEASES:** Clinical Analysis and Synthesis of Symptoms and Signs, by JULIUS BAUER, M.D., F.A.C.P., Clinical Professor of Medicine, College of Medical Evangelists, Los Angeles; Formerly Professor of Medicine, University of Vienna. *Grune and Stratton, Inc.*, 381 Fourth Ave., New York 16, N. Y. 1950. \$12.00.

The author's preface has at least two sentences which no ordinary doctor could have written: (1) to arrive at a correct diagnosis a wide range of diagnostic possibilities must be taken into consideration and symptoms and signs of each must be evaluated with regard to those presented by the case in question; (2) it should be made a rule to concentrate attention first and foremost upon the possibility of ailments that require a specific, or even life-saving, treatment.

No medical book written with those two impelling principles in mind can possibly be poor, or even mediocre.

Part I is devoted to leading symptoms, their probable and possible significance; Part II to leading signs.

Brief and to-the-point case reports illumine the text. There is a sufficiency, but no redundancy of references. Information obtainable at the table- or bed-side is ranked at least as high as that to be

had from the laboratories. The reader is not confused with a recital of a number of diverse opinions. What the author judges to be best is plainly put forward, and that is as it should be.

This review copy will be kept by the reviewer as his very own, and appealed to daily.

**PRINCIPLES OF GENERAL PSYCHOPATHOLOGY.** by SIEGFRIED FISCHER, M.D., Clinical Instructor in Psychiatry, University of California; Formerly Professor of Psychiatry and Neurology, University of Breslau. Philosophical Library, 15 E. Fortieth Street, New York. \$4.75.

This book is offered as a survey of the most important psychopathological phenomena and their theoretical bases. Part I deals with the fundamentals, Part II with causal connections, Part III with syndromes or symptom-complexes of mental disturbances, and Part IV with normal neurotic and psychopathic personalities and the relation between personality and psychosis.

The necessity for clear definitions of the terms used is realized by this psychiatrist. "Nothing," says he, "can be more dangerous in a science than the use of expressions which are not exactly defined or which are used loosely and inconsistently."

Represented as new points of view are making distinction between consciousness and awareness, the interpretation of pathology of thought, the definition of intelligence. There is discussion on whether or not dynamic psychology is a science.



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One would be hard put to have to say which of the 25 chapter titles has the most appeal. Consider these: thought and its disturbances; memory and its disturbances; attention and its disturbances; drive, volition and their disturbances; intelligence and its disturbances; phantasy; language and its disturbances; personality and psychosis.

How few will so begrudge the price as to fail to read all that the author has to pay on these subjects of absorbing interest to all thinking persons—especially since he has promised to use no expression which is not exactly defined!

PROGRESS VOLUME to accompany Hyman's *Integrated Practice of Medicine*. An appraisal of latest developments in therapeutics prepared by HAROLD THOMAS HYMAN, M.D., to accompany his four-volume *Integrated Practice of Medicine*. Contains cross reference to the original four volumes and an index system to all five volumes. 734 pages. W. B. Saunders Company, Philadelphia and London. 1950. \$10.00.

This book, a supplement to *An Integral Practice of Medicine*, gives the substance of discoveries and advances in medical science made between time of going to press of the original work and such time for the supplement. Many useful preparations not Council-approved are included. Clear differentiation is made between accepted products and those not yet accorded acceptance.

We may well accept the author's assurance that, with the *Integrated Practice of Medicine* and its *Progress Volume* at hand, a physician may feel secure in the knowledge that he has at his disposal a precise and concise guide to effective therapy.

HUMAN STERILIZATION: Techniques of Permanent Conception Control, by ROBERT LATOU DICKINSON, M.D., and CLARENCE JAMES GAMBLE, M.D. *Waverly Press, Inc.*, Baltimore, Md. 1950.

Dr. Dickinson has courageously devoted himself to the cause of more sensible and more humane reproduction for so many years that one would hesitate to state the number. This little book on the need for and the means of inducing human sterilization can be obtained from the Human Betterment League, Box 3036, Winston-Salem, N. C.; or from the Planned Parenthood Federation of America, 501 Madison Avenue, New York 22, N. Y.

THE OTHER SIDE OF THE BOTTLE, by DWIGHT ANDERSON. A. A. Wyn, Inc., New York. 1950. \$3.00.

The author tells his own story of his recovery, 18 years ago, from what seemed to be an incurable form of alcoholism. He supplements this story by many case histories from life and from literature. The book is written in much better English than are most books that come from the presses today; it is not faddistic; it will help a good many among the intelligent alcoholics, if they will read it.

BRONCHOSOPHAGOLOGY, by CHEVALIER JACKSON, M.D., Sc.D., LL.D., F.A.C.S., Honorary Professor of Bronchoesophagology and Laryngeal Surgery, Temple University, Philadelphia; and CHEVALIER L. JACKSON, M.D., M.Sc., F.A.C.S., Professor of Bronchoesophagology and Laryngeal Surgery, Temple University. 366 pages with 260 figures. W. B. Saunders Company, Philadelphia and London. 1950. \$12.50.

Exhaustion of three editions of this textbook, and its translation into French, Italian, Spanish and Japanese established the fact that Dr. Chevalier Jackson and his son are as gitted in transmitting knowledge by printed page as the records show the senior Dr. Jackson to have been in developing this branch of surgery.

Forty years ago a certain nectar was advertised to the world in only four words, "Wilson's Whiskey, That's All": Now it's "Jackson's Bronchoesophagology, That's All."

RESEARCHES IN BINOCULAR VISION, by KENNETH N. OGLE, Ph.D., Section on Biophysics and Biophysical Research; Research Consultant in the Section on Ophthalmology, Mayo Foundation and Mayo Clinic, Rochester, Minnesota. 345 pages with 182 figures and 26 tables. W. B. Saunders Company, Philadelphia and London. 1950. \$7.50.

The distinguished ophthalmologist who contributes the foreword says this book is a fine example of how an author should present his researches in a difficult subject. In one short sentence is said all that is needful to impel doctors in this field to make a close study of this admirable presentation of the results of this first-class piece of research, which was carried on for a score of years.

The greater part of the substance of this book is based on researches in binocular vision carried out at the Dartmouth Eye Institute over a period of 18 years. Here are summarized and integrated the pertinent parts of that work into the general body of knowledge of visual processes.

REGIONAL ORTHOPEDIC SURGERY, by PAUL C. COLLOMNA, M.D., Professor of Orthopedic Surgery, University of Pennsylvania Medical School. 706 pages with 474 figures. W. B. Saunders Company, Philadelphia and London. 1950. \$11.50.

The author states that this book is mainly the outgrowth of his teaching of orthopedic surgery in graduate and undergraduate courses from a regional approach. Special consideration is given to common clinical conditions, by regions, stressing the principles of physical diagnosis and treatment. Specially valuable features of the book, in addition to that of the approach to clinical cases being that which promises most in practice, are its insistence on detailed examination and its careful instruction in how to make such examination, and its balanced consideration of the value of bringing various of the procedures of physical medicine to bear in the treatment of orthopedic conditions.

The author tells us that successful results from

physical therapy depend more on understanding and properly applying readily available forms of treatment than upon the use of elaborate apparatus. We need not read further to learn that the whole of the work is of a high order.

#### BE ON THE LOOKOUT FOR BRONCHIECTASIS

(R. A. Dornier, Des Moines, in *Jl. Iowa Med. Soc.*, July)

Bronchiectasis is often overlooked or wrongly diagnosed. Too often children with typical pictures of bronchiectasis are given the diagnosis chronic bronchitis or parents are told the child will outgrow it.

Histery will give the proper lead in most cases. Any patient with a histery of cough, particularly on arising and retiring, putting up much sputum (if this is not swallowed), with or without clubbing of the finger nails, should have bronchograms to rule in or out bronchiectasis. Bronchiectasis cannot be diagnosed by routine x-ray films.

Bronchiectasis is a common disease which usually develops after pertussis, pneumonia or measles, or a combination of these diseases. During these diseases one must carry out procedures to prevent the development of bronchiectasis if possible. If bronchiectasis develops the patient should be studied with the thought of cure by surgery. Surgery is urgent since a high percentage of patients who develop bronchiectasis before the age of 10 years are dead of the disease or its complications before the age of 40 years. The risk of lobectomy (even bilateral) or pneumonectomy is slight compared to the risk of the patient keeping his diseased lung tissue.

#### SMALLPOX STILL FATAL

(Editorial in *British Med. Jl.*, June 17th)

The s. s. Chitral sailed from Bombay on February 11th, called at smallpox-free ports, and docked at London on March 5th, with no evidence of smallpox on board. After travelling by train to Glasgow a seaman from the Chitral developed pneumonia (confirmed radiologically) and was admitted to hospital March 10th. Four days later, without having had any recurrence of fever, a papulo-vesicular rash appeared—"varicella." The patient was transferred to an isolation ward, and discharged as cured on March 23rd.

On March 26th, six patients were removed to a smallpox hospital—three from the original hospital, two from other hospitals to which they had been admitted, and one from the patient's own home—and by March 31st there had been transferred to the smallpox hospital the original patient and 20 contacts, of whom 17 certainly had smallpox.

There arose a public demand for vaccination in the city, and 162,000 persons were vaccinated at centres opened by the public health department, while 220,000 doses of vaccine were supplied to general practitioners.

*Of the 18 confirmed cases six had no vaccination scars. These six patients all died and were the only patients to die.*

VIRUS LABORATORY DIAGNOSTIC service, when it is available, can usually offer diagnosis only in retrospect, since only in rare instances can positive laboratory findings be demonstrated during the patient's illness.

—R. A. Morrissey, Chicago, in *Ill. Med. Jl.*, Oct.

The most wonderful thing ever made by man is a living for his family.

SIR CHARLES NAPIER reported his victory at Hyderabad, and capture of the city of Scinde, in 1843, in the one word: "Peccavi." Before the battle of Miani he said: "If I survive, I shall soon be with those I love; if I fall, I shall be with those I have loved."

#### CHUCKLES

VIVISECT THE OLD MAN  
(From the *New York Daily News*)

Morristown, N. J.: The *Voice* recently printed a letter from a nut who criticized dog-lovers and advocated vivisection. Why don't such people offer themselves for vivisection? Or why don't they take all the good-for-nothing drunken sots, male and female, and cut them to hell up and leave our faithful, trustworthy dogs alone? In fact, if they want someone to cut up, they can have my mutt of a husband and I hope you print this letter, because I'd like to show it to him.

Mrs. Lonnie M.

The traveling salesman was telling his cronies of an experience he had had a few days before. "D iving through the mountain country, I saw targets painted on every tree and post in sight, and each sported one bullet hole in the dead center. I inquired at the village and was amazed to learn the marksman was the village dimwit. I went over to him and asked, 'How do you happen to be such a dead shot?' 'Easy as pie,' he answered. 'I just shoot first and paint the target afterwards.'"

A pink elephant, a green rat and a polka-dotted snake walked into a cocktail bar.

"You're a little early, boys," said the bartender. "He ain't here yet."

First Steno: "I have an awful cold in my head."

Second Ditto: "Well, that's something."

One man in 1000 is a leader of men; the remaining 999 are followers of women.

Mrs. Black: "Emily's husband must smoke a great deal—I heard him say he always smokes three cigars after a good dinner."

Mrs. White: "My dear, I don't believe that would account for more than three cigars a month."

"Smith is not only a bad driver—he's a crook!"

"How so?"

"We had a collision, and he gave me a drink to steady my nerves—and then the police came."

Close the door—across the river

He has gone.

With an abscess in his liver

He has gone.

Many years of rainy seasons

And malaria's countless treasons

Are among the many reasons,

Why he's gone.

—Anon.

There was an old fellow named Sidney,

Who drank till he ruined a kidney;

It shriveled and shrank

But he drank nd he drank—

He had his fun doin' it—dideney.

—Don Marquis.

Plain "Ben" we called our pussy cat,

(We thought it was a "Sir");

But when the little kittens came—

We changed it to "Ben Hur."

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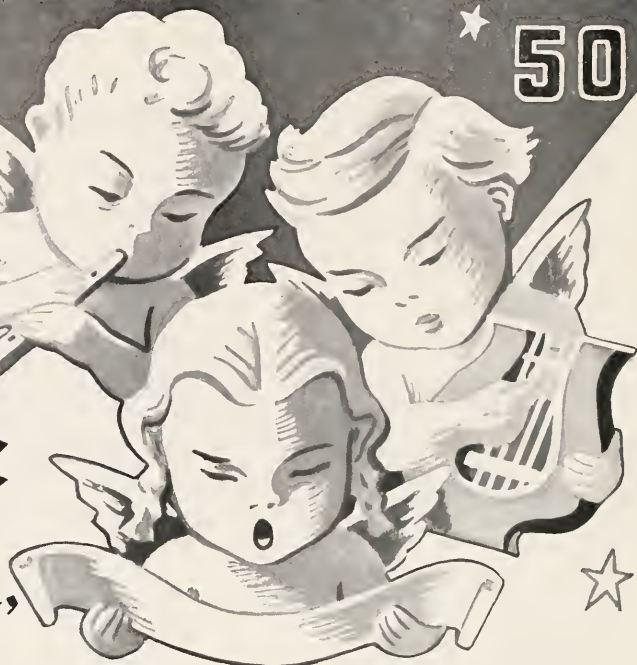
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JAMES M. NORTHINGTON, M.D., Editor

VOL. CXII

DECEMBER, 1950

No. 12

## The Diagnosis and Treatment of Certain Infections of the Vulva and Vagina

Granuloma Inguinale; Lymphopathia Venereum; Monilia Vulvovaginitis; Condylomata Acuminata

RANDOLPH H. HOGE, M.D., Richmond

From the Department of Gynecology, Medical College of Virginia, Richmond

Based on Lecture Third Annual Medical Assembly, June 6th, 1950

**THE ADVENT** of antibiotics has greatly changed the treatment of some pelvic infections and has had little or no effect on the treatment of others. An example of the former is the now rapid and complete cure of gonorrheal infections through the use of penicillin, streptomycin, chloromycetin, aureomycin and terramycin.

It is the purpose of this paper to discuss briefly the diagnosis and advanced treatment of certain infections other than those of gonorrheal origin, involving the lower genital tract in women. These are granuloma inguinale, lymphopathia venereum, monilia vulvovaginitis, and condylomata acuminata. The first two are now rapidly cured with antibiotics; the latter two are not benefited by these drugs, but other effective drugs have been found. One of the most common infections of the lower genital tract, trichomonas vaginalis vaginitis, is not discussed because of limited time and because there have been no recent advances in its treatment.

### GRANULOMA INGUINALE

**Diagnosis:** This is a chronic infectious venereal disease chiefly of the skin and subcutaneous tissues of the external genitalia. It is a disease limited almost entirely to the colored race, and is characterized by ulcerating granulomatous lesions. Sites

other than the vulva may be involved. Recently we have had several cases of involvement of the cervix uteri.

The infecting organism is a Gram-negative, encapsulated, encysted, intracellular, short or oval rod. The primary lesion is usually small. Ulceration occurs early and secondary infection is common. Extension occurs, there is frequently a foul exudation, massive granulation tissues are built up, and considerable scarring develops. The lymphatics become obstructed and elephantiasis results. The general health is usually good. The appearance of the lesion may cause one to suspect the correct diagnosis. However, lymphopathia venereum, tuberculosis, carcinoma, and other diseases may simulate this disease. The correct diagnosis is established by demonstrating the Donovan bodies on microscopic sections or smears stained with the Giemsa stain. It is well to bear in mind that more than one disease may be present in the area involved.

**Treatment:** There was no satisfactory treatment of this condition until quite recently. Formerly the best treatment was the use of antimony, in the form of tarter emetic or Fuadin. However, the results were not satisfactory and the disease often lasted for many years and produced crippling lesions. Now the advent of more recent antibiotics

has changed the whole outlook for the disease. Penicillin did not prove effective, but streptomycin proved to be of remarkable value. Four gram (1 gram q. 6 h.) of the latter drug, given daily by the intramuscular route over a period of five days, has proven adequate to cure this disease. Most of the improvement occurs after the drug has been stopped. A 250 milligram capsule of aureomycin, given orally three times a day, for a total dose of 50 to 140 grams, also cures this disease. Chloromycetin is also effective. Terramycin, given orally in divided doses of 1.5 to 5 grams daily for 12 to 15 days, results in healing in all cases so far reported. Microscopic examination of tissue removed from the site of the lesion a few days after treatment with appropriate antibiotics shows absence of Donovan bodies. Occasionally, after the inactivation of the disease by the use of these antibiotics, tumor masses may remain which should be removed surgically.

#### LYMPHOPATHIA VENEREUM (Lymphogranuloma Inguinale)

*Diagnosis:* This is a communicable disease, usually of venereal origin, occurring most frequently in the Negro race. It is caused by a filterable agent and involves the lymphatic structures of the inguinal, genital, and rectal regions. In the female the genital and the anorectal regions are most commonly affected. The disease begins with a small, transitory, herpetiform lesion which may be unnoticed. With extension of the disease and blockage of the lymphatics chronic edema, ulceration, elephantiasis, abscess formation, fistula formation, rectal stricture, and adenitis may result. This disease is probably the most common cause of benign anal strictures in women. In the differential diagnosis of lymphopathia venereum one must consider granuloma inguinale, syphilis, tuberculosis, carcinoma, and other diseases.

The Frei test is specific for this disease. The test becomes positive several weeks after exposure and is believed to remain positive throughout life. It may be performed as follows:

Lymphogranuloma antigen and antigen control are inoculated intradermally into the forearm. The skin reaction is read 48 to 72 hours later. An erythema, regardless of its extent, surrounding the point of injection is not considered significant. A papule, measuring 6 mm. in diameter, or more, indicates a positive reaction, provided that the papule at the site of the control infection measures 5 mm. or less in diameter. A positive test means that the patient has, or has had, lymphopathia venereum. Other diseases may be present concomitantly or sequentially.

*Treatment:* There was really no very satisfactory curative treatment of this disease until recent years, and the disease usually progressed for years

and led to much deformity. Later the sulfonamides, especially sulfanilamide, proved to be of value. Now certain of the most recent antibiotics have proven to be of so much more value than the sulfonamides that the latter are no longer indicated. Penicillin and streptomycin are not effective in this disease but may be of value in overcoming secondary infections. Aureomycin has given good results in a number of cases, apparently both curing the primary disease and overcoming the secondary infection. Twenty-five mgm. per kilo of body weight, given orally every 24 hours, is a recommended dosage. At the time of this writing at least one case of this disease has been reported as cured following the use of the new antibiotic, terramycin, in doses of 1 gram orally every six hours for 15 days. Following cure of this disease, through the use of these drugs, there will be some cases in which anatomic abnormalities, such as strictures, fistulas, and masses may require appropriate surgical treatment.

#### MONILIA INFECTIONS

*Diagnosis:* Yeast, or Monilia, infections of the vagina and vulva are fairly common. The incidence of this infection is increased in cases of diabetes and in pregnancy. Patients usually complain of considerable irritation of the vulva and vagina and itching to a less degree. Characteristically, there is redness of the mucous membranes and an exudate resembling cottage cheese. These may extend to the vulva. The diagnosis is suspected on a basis of the history and physical findings, but should be confirmed by microscopic examination. If the organism is abundant it may be found when a drop or two of the discharge is placed in a similar amount of normal saline solution and examined immediately. However, we have found a dried stained smear more satisfactory and we prefer the Gram stain. With this stain the yeast mycelia and/or buds stand out conspicuously as Gram-positive structures. It is well to examine a fresh wet smear also because occasionally there is a concomitant trichomonas infection and the trichomonads can be detected only on the wet smear.

*Treatment:* The time-honored treatment is the painting of all involved parts with a 1 per cent aqueous gentian violet solution. This treatment is satisfactory in most cases but it has the disadvantage that the dye stains the patient's clothes. Because of the latter we no longer use this treatment routinely. We find that a douche solution made from sodium perborate, sodium lauryl sulfonate, and certain aromatic oils is effective in most cases, is pleasant to use, and does not stain. A propionate compound vaginal jelly was also found to be of value. The jelly contains calcium propionate 9.5%, sodium propionate 9.5%, and propionic acid 1%.



with inert ingredients 80%. In diabetic patients the urine should be kept sugar-free or the infection is likely to persist despite all local treatment.

#### CONDYLOMATA ACUMINATA

**Diagnosis:** These so-called venereal warts are probably infectious in nature but are not necessarily venereal. Irritating vaginal discharges may play a part in their etiology. The individual lesion is usually small, discrete, soft and pointed. The lesion may occur singly. More often there are scattered lesions about the vulva, more particularly about the posterior half of the vulva. The urethra, the anus, the vagina, and the cervix may be involved. Sometimes many such lesions become confluent and may form a mass even of enormous proportions. These lesions should not be confused with the condylo-mata lata of syphilis. Usually the diagnosis can be readily made on inspection but on rare occasions it may be necessary to make microscopic examinations of the lesions.

**Treatment:** In the past various forms of therapy have been used. These have included excision, electrocoagulation, and x-ray therapy. These methods of treatment are still used today in some cases. However, there is now in use a treatment which, in the majority of cases, is much more satisfactory than any of the others previously used. This treatment consists in applying to the lesion a 25 per cent suspension of podophyllin in mineral oil. Often one application is adequate. Occasionally more are necessary. The lesions usually disappear within a few days. The surrounding normal structures should be protected when the drug is applied because it is very irritating to these structures.

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the Treatment of Twenty-five Cases of Lymphogranuloma Venereum. *J. A. M. A.*, 138:408, 1948.

#### ILL EFFECTS OF THE RADIUM MENOPAUSE

(H. C. McLaren, in *British Med. J.*, July 8th)

The radium menopause is apparently free from any severe delayed effects, but flushings, sexual anaesthesia, and mild involutional changes in the genital tract may be important, even severe, disabilities. Most of these ill effects can be improved by the use of stilbestrol. Indeed, 19 of our patients were already under stilbestrol treatment by their own doctors for flushings. However, 40 patients were suffering the discomfort of flushings with loss of sleep, etc., apparently content with the assurance that the effects of the "change" are inevitable and would soon cease.

Apart from emphasizing the effects of castration by radium or any other method, our investigations do not answer the difficult clinical problem of selecting the safest and best method of treating a specific case of simple menorrhagia at or near the climacteric. After diagnostic curettage it is often good practice to delay a decision on final treatment, sending the patient to a convalescent home, where rest, iron therapy and so on may continue to improve her general condition.

Severe or moderately severe flushing may persist for months or years in 50% of cases after the radium menopause (three times the normal incidence).

Only 50% of patients had interest in sex matters before treatment. Of the remainder every other case quickly became sexually anaesthetic after radium treatment (no "controls" are available).

Premature senility of the lower genital tract may follow soon after radium—for example, five out of 72 had a tender inflamed introitus, and 11 out of 68 had "pre-vaginitis" (red spots).

#### BRITISH DOCTORS REPORT COLD CURES NO GOOD

(Reported by a Special Committee of the Medical Research Council, *British Med. J.*, Aug. 19th)

In a small but carefully controlled experiment two antihistaminic drugs—promethazine hydrochloride and chlorcyclizine hydrochloride—showed no evidence of having any value in the preventing of experimentally induced colds.

A large-scale clinical trial of thonzylamine in widely separated areas in Great Britain and Northern Ireland, carried out between the middle of March and the middle of May, 1950, showed that, in the dosage employed, this antihistaminic drug had little if any value in the treatment of the common cold.

#### WHAT DO YOU MEAN "NERVOUS"?

(E. Gallop, in *British Med. J.*, Aug. 19th)

The word nervous on the one hand is used for the great miscellany of neurotic illness, and on the other for the timid and fearful. But they have nothing in common. The neurotic may be and in fact often is fearless, almost contemptuous of personal danger, and yet the word lumps him together with the craven-hearted. A meaningless word, with no ethical significance for the neurotic type of nervousness, I suggest is *croblly*, adjective or adverb, and *crobliness*, where a substantive is needed.

A PROMINENT "diagnostician" writes in a reputable medical journal: "The study of the bone marrow has now become of considerable importance not only as a diagnostic procedure but as an integral part of the routine procedure for a complete investigation of the patient."

Would the Great Doctor allow another Great Doctor to plunge a trocar into his breast-bone to gratify the idle curiosity of a silly "medical scientist" bent on making "a complete investigation of the patient"?

# The Problem of the Squinting Child

THE DEPARTMENT OF OPHTHALMOLOGY OF THE PRESBYTERIAN HOSPITAL  
Charlotte, North Carolina

## PART I

### INTRODUCTORY REMARKS

H. C. NEBLETT, M.D.

IN introducing the topic for tonight's discussion I wish to remind you that we, the members of the Department of Ophthalmology, will attempt to make a brief and practical presentation of the subject. The discussion will deal with the etiology, diagnosis and treatment of that type of squint which is found at birth, or occurs from a few months after birth to approximately the 7th year of age. Squints occurring from other causes, as intracranial and intraocular lesions, and trauma to the globe and muscles, will be given scant consideration.

It is realized that this subject is not calculated to arouse the keen interest of the majority of you as would the discussion of some other phase of medicine. Nevertheless, the squinting child merits a greater degree of consideration by all physicians than is customarily given him. That keener interest may be aroused in you toward this end, I will refresh your memory by citing some of the complications and sequelae which are common in delayed or improper treatment or lack of treatment for a squinting eye.

In the main the finding and referral of these cases is in the hands of the general practitioner and the pediatrician. The parents will usually assent to their advice. The child's physician through a careful examination can usually detect a squint, and having done so is in position to give prompt and constructive advice to the parents as to the urgent necessity for proper handling of the case. Having placed on the parents the responsibility of accepting or rejecting the advice given, the physician has fulfilled his mission.

A cursory examination will detect only a few of these squints. If the condition is found and the parents advised that the child will "outgrow" the squint such advice is based upon an unsound premise, a false sense of security is given the parents, and the child becomes the victim of the inertia of the physician and the parents.

There is scarcely any manifest anomaly that causes more concern to the parents, to the neighbors and to the victim than a squinting eye; and certainly there is no more disgruntled a person than a parent of one of these little victims who has

As presented by the Department of Ophthalmology to the Staff Meeting of the Presbyterian Hospital of Charlotte, North Carolina, November 14th, 1950.

been casually advised, or ill advised about the child's condition and its management. There should be no delay in putting into effect measures proper to the management of these cases. Delay results in precipitation of the following problems. (1) A child rarely "outgrows" a squint. (2) If left untreated economic visual efficiency is usually lost and rarely redeemed in the eye. (3) Once a squint develops, and particularly if unilateral, useful vision can be lost in that eye within a period of three or four months. (4) The victim of a squint surprisingly early develops a severe complex imposed by his fellows which changes his whole psychic being. This personality change is too often carried over into adult life if correction of the squint was too long delayed. (5) Vision is usually fully developed by the age of six or seven. (6) Surgery after this age rarely redeems the lost vision and is mainly done for cosmetic reasons. (7) Other methods of treatment after this age are usually fraught with disappointment as to full visual rehabilitation and good muscle function. (8) Unnecessary delay in the proper management of these cases is productive of fibrosis and contractures of the muscles involved, and much loss of tonicity in the coördinating and antagonistic muscles. These complications make surgical procedures more difficult, and good muscle function less probable of attainment. (9) Some of these squints are corrected and the vision maintained if early treated by glasses alone, or in conjunction with visual training, and early surgery in some cases. (10) If surgery is indicated for correction of the squint, other methods having failed to correct it, it should be done promptly, and in nearly every case prior to school age. (11) Finally, the visual loss and the cosmetic appearance in these delayed and untreated cases denies to the victim many social gratifications and many lucrative vocations in later life.

The etiology, diagnosis and treatment will now be given by Drs. Graham, Stratton and Foster, respectively. Dr. Holden will close the presentation of the subject.

## PART II

### THE ETIOLOGY OF CONVERGENT SQUINT WALTER R. GRAHAM, M.D.

ALL VARIETIES of squint are brought about by some obstacle to normal binocular vision. The essential cause of squint is a defect of the fusion faculty. The visual apparatus is divided into four

parts: (1) Optical, (2) Sensory, (3) Motor and (4) Central. Any obstacle to any one of these parts may cause squint. When the obstacle is bilateral nystagmus occurs. When the obstacle occurs to one eye in a child the eye frequently swings in. When the obstacle occurs in an adult the eye frequently swings out in the position of rest.

Some of the optical obstacles are: (1) High refractive errors especially hyperopia (far-sightedness). This will be discussed later. (a) Incorrect glasses. (b) Opacities of the cornea, lens or vitreous.

(2) Sensory obstacles may be: (a) Failure of development of visual pathways. (b) Tumors or diseases of the retina or optic nerve. (c) Prolonged covering of one eye with an eye-patch or reflex closure of the lids as a result of inflammation.

(3) Motor obstacles: (a) Those affecting adnexa, orbit and globe. These may include inflammatory or neoplastic conditions. (b) Obstacles affecting the muscle itself. These are really orthopedic conditions, and may be the result of an injury due to a blow or to birth trauma. These may result in fibrosis of the muscle. (c) Other motor obstacles are anomalous insertions of the extraocular muscles. (d) There may be conditions affecting the motor nerve trunks, the motor nerve nuclei and conditions affecting the supranuclear centers.

(4) Central obstacles may include physical or mental trauma or illness in an individual with poor fusion sense. Children with poor fusion sense are usually intelligent and excitable. Another central obstacle is simply a deficiency of fusion.

In order to understand the cause of convergent squint in a child who is far-sighted, you must remember that when an individual who has a normal pair of eyes looks at a distant object, the two eyes are parallel and the individual is not accommodating. When this same individual looks at a near object, such as a book, the two eyes turn down and in, and the individual accommodates in order to see clearly for near. There is always a definite convergence-accommodation ratio. When the child who is farsighted looks into the distance this child accommodates in order to see clearly, and when this same child looks at a near object he accommodates that much more in order to see the near object clearly. This means that this individual is accommodating for distance and for near. In an individual who has poor fusion sense one eye may begin to turn in at times when he is tired or when he is ill. This turning in of an eye may become progressively worse. At the same time the vision in the eye which turns inward becomes diminished. As time goes on his vision may drop considerably. One of the childhood diseases may be a precipitating factor in the cause of squint.

This presentation deals with convergent squint. The divergent and vertical deviations are often due to anatomical conditions.

## PART III DIAGNOSIS

J. DAVID STRATTON, M.D.

**I**N MAKING the diagnosis there are a number of points to keep in mind. First, is the history. Second, the visual acuity. Third, the refractive error. Fourth, measuring the deviation. Fifth, other diagnostic points. And finally, the analysis of the case.

History includes: age of onset, the way the onset occurred—sudden, or rather slowly, and such precipitating factors as may be operative. History of other such troubles in the siblings or in the parents' families. Does the angle vary? Have glasses ever been worn?, or have eyes ever been tested? Do the glasses reduce the deviation? Which is usually the crossing eye?, and is there evidence of double vision? Lastly, has the patient ever been subjected to surgery?

In this age group it is rather difficult to get the absolute degree of visual acuity. Many points can be used in determining whether the child is seeing with one or both eyes, and whether the acuity is up to what we call normal for a child. The younger the child the smaller will be its powers of concentration upon test letters. For this reason it is rather wise to have the mother or someone else hold a cover before the untested eye while the examiner stands and points out the test figures on the wall. I prefer to use a series of *E*'s of varying size and turned in varying directions playing a sort of a game, calling them kittens or puppies; trying to have the child show which way the legs and tail are pointed. By this means, in most children, one can get a fairly accurate record. One word of caution. You must never let the person suspect which way the *E* is pointing by indicating with your pointer or finger the proper direction. Even small children catch on very quickly! It is important for the examiner not to at all hurry. In the visual acuity test, the patient must be at his best comfort or at ease for this testing.

Next, the refractive error must be determined. This is best done by atropine cycloplegic, but in my experience both a cycloplegic and a manifest determination are each informative. Attention is especially centered on whether the atropinization or the correction obtained causes a change in the deviation. Full correction is worn, and if it does alter the deviation, the full atropine correction is worn. Naturally, a high hyperopia which when corrected has markedly less deviation, is called accommodative squint.



Next, the deviation should be measured. There are a number of methods to do this, the one that is rapid and is rough and convenient for everyone to do is called the Hirschberg method. This simply consists of having the child fixate the uncovered lamp of an ophthalmoscope and you observe the reflex in the cornea. That eye which is fixing will have the light reflex in the center of the pupil and in the eye in which there is a deviation, the deviation can be seen by the fact that the light reflex is not in the exact center. To determine the amount of deviation a rough system is used. Such as, if the light reflex is at the edge of the pupil the deviation is 15 degrees, if it seems to lie somewhere between the pupillary margin and the edge of the eye or limbus the deviation is 30 degrees, if the reflex falls at the limbus the angle is 45 degrees, if the reflex falls in between the observer must interpolate. Greater accuracy may be determined by measuring the distance of the corneal reflex from the limbus in mm. The perimeter can be used also. Thus the angle of deviation is read directly on the perimeter. This I think is the best and most accurate test and should be done before a surgical procedure is contemplated. For small deviations the prism cover test method is used. This is a standard for all muscle patients and is done at the distance of 20 feet and 14 inches, in the primary position and the six cardinal directions. It is of course somewhat difficult to interpret if the patient has poor vision in the non-fixing eye and has difficulty in using this eye to fixate. Results will have to be interpreted on an individual basis. A point to be remembered here is that each of the movements of each eye must be considered to see whether it is full range. This is best done by covering one eye, asking the patient to follow the finger in the upward and downward motions, in side-to-side, in corner movements right and left hand, up and down. The range of these motions is compared in each eye and is compared to what is considered normal, in this way weakness or overaction of one muscle as compared to another can be picked up readily. It is in this part of the examination that muscular weaknesses and paralyses can be picked or found in the traumatic lesions.

The next step in our diagnostic examination is one in which we consider numerous other diagnostic points. First of these is abnormal retinal correspondence. By this is meant the fact that the macular area of one eye is not used for fixation. Naturally, this is not normal so the term abnormal retinal correspondence is a result. This is picked up in any number of ways, primarily by noting that, when the patient is fixing with the eye, the corneal reflex is not in the center of the pupil. If this abnormal angle is relatively small of course it is not readily verified and a more accurate

method is that called "the cross," in which the patient views with one eye a long light bulb which is held vertically and with the other eye the same bulb held horizontally and then the light being turned out he is asked to describe what is seen. If he sees a plus sign we know that he has normal retinal correspondence but if we find that the vertical cross member is to the right or left-hand side of the horizontal member it can be easily deducted which direction the eye deviates. The fact that a person has a head or face tilt sometimes comes into play in the paralysis of weak muscles. This is a feature which we will not discuss further for the purposes of this paper. Knowing which is the fixing or dominant eye is important in diagnosis. That usually is the eye with the better sight and in testing it is commonly a practice to use the dominant eye as the one to fix all objects and therefore measure the deviation from it to the other eye. Degrees of fusion are rather important when dealing with a possible diagnosis and operative procedures. We have three degrees: first-degree fusion has been defined as simultaneous macular perception; second-degree fusion is the ability to perceive the images of objects simultaneously with the two maculas, to fuse the two images, and to hold that fusion even when the object or objects responsible for the images are purposely displaced; third-degree fusion is commonly accepted as synonymous with depth perception or stereopsis.

Now in analyzing the case after complete examination has been done and diagnostic points have been determined, we must ask ourselves a number of questions. What is the duration of the deviation? What do the muscle actions suggest? What do the versions suggest? Is the apparent deviation primary or secondary? Is the deviation due to paralysis or spasm? What is the near point of convergence? What is the visual acuity in each eye separately, both with and without correction? Is there an accommodative element present? Is diplopia present and if so what muscles are incriminated on a basis of diplopia field charting?

Let me remind you in closing that every practitioner can do two simple tests at any time with the equipment he usually has at hand. That is, observe the location in the pupil of the corneal reflex from a flashlight, and also observe the movement of the eyes when alternately covered.

#### PART IV THE TREATMENT OF TURNED EYES IN CHILDREN

CLARENCE B. FOSTER, M.D.

**J**UST AS the hardest part of a football game is played before the whistle blows, in poring over scouts reports and analyzing the opponents tactics; so the most difficult phase of handling turned eyes



is that of formulating the diagnosis.

As Dr. Stratton has just shown, the probable causes of any case of squint presenting itself are:

1. Fusional failure
2. Refractive disability
3. Anatomic changes, or
4. Any combination of the three just named.

**Fusional Failure.**—Fusion consists simply in the psychological welding of two image impressions to make one complete perception. When this goal has been realized, reflex stimuli are directed to the binocular system so that the eyes are directed simultaneously at the same object in space.

When failure in psychological fusion occurs the stimulus toward simultaneous and similar placing of the eyes is faulty, and one eye goes one way the other another way.

The treatment is directed toward:

1. Making the patient aware that one object can be seen in using two eyes, and
2. Educating the binocular system to a habit of continuing this feat.

This is done by exercises on a stereoscope, or some modification of a major amblyoscope. The process is demanding, and time-consuming. Fortunately but a small percentage of ocular deviations are of this type.

**Refractive Disability.**—Of the group under seven, exclusive of complicated cases (those due to spastic paralyses, birth injuries, etc.), in the great majority of cases of turned eyes, the trouble originates from the effort expended in endeavoring to realize a clear image. This is particularly notable in crossed eyes (esotropia) where farsightedness exists. Here the extra accommodation required for a clear focus reflex calls forth an unwarranted contraction of the internal rectus muscles, and the eyes move inward. It is found in myopia, when the low degree of accommodative effort fails to maintain sufficient tonus of the internal rectus muscles, and the eyes drift outward.

The treatment is to take the full and complete correction for the refractive disability (obtained under atropine examination if necessary), and see that the prescribed lenses are worn all of the time each day of the week. Subsequent examinations and measurements of resulting eye positions will serve as a guide in progressing toward single binocular vision.

**Anatomic Changes.**—Every case of turned eyes resulting from refractive failure (starting with a functioning neuromuscular apparatus and normal muscles and fasciae), that is neglected (not corrected with lenses), ultimately develops anatomic changes. These changes are irreversible, consisting of formation of extra muscle-fiber in the stimulated area, and eventually some degree of fibrosis. The opposing muscle is contrastingly thinned and

permanently weakened. This type, in the age group, is always lateral (horizontal) in deviation, and chiefly so inward—that is in esotropia.

The treatment is operative. The permanently contracted muscles must have their tendons repositioned to weaken their pull, while the weakened muscles must have their tendons replaced to increase their effectiveness. The net result, whether done in one, two, or three operations, should be a pair of eyes facing practically straight ahead.

The complicated instances of anatomic changes are manifest previous to the two-and-one-half to three-year level of the refractive group. They are noticed at or soon after birth, and almost invariably have paralyses and contractures of vertically acting muscles, independent of or concomitant with the horizontal (lateral) changes. The treatment surgically is the same—repositioning of the tendons in the vertical muscle group.

**Combinations.**—If fusional problems, together with refractive disabilities and anatomic changes are encountered, all three solutions must be applied in varying order. The case will require longer treatment, and there will be less certainty of perfect results. Still, enough improvement can be anticipated to warrant all the time and effort expended.

In general, to pursue the treatment of a squinting child successfully, several points must be noted.

1. The physician should make an estimate of the total length of time required to achieve a reasonable result, and map out a plan, in steps, in order to arrive at this end.

2. He should take the parents into his confidence and spend the necessary time to discuss with them in their own language the causal and treatment factors. Together they should agree on the necessary steps of the campaign, and lay them out in order.

3. The most obvious and pressing factors, be they operative, fusional, or refractive, should be taken up first.

4. The secondary or correlating factors should then be taken up. Those needing further work should be taken up and worked over again, not failing to consider any emotional problems that could easily hinder the progress of the case.

5. The treatment should be continued without discouragement until the original plan has been completed, and all possible has been done.

This discussion concerns the turned eyes of children up through the seventh year. The great bulk of the cases show up around two-and-one-half to three years. These are largely refractive in origin with a few fusional failures. Why these eyes become turned at that particular age period can be readily understood by considering certain facts about the visual system.

From the first year well into the second, the

eyes are engaged in gross fixation of large objects, moving objects, and parents' features. Sometime around two-and-one-half years the child begins to fixate on smaller, more definitive objects, begins to look at picture books, to trace, and to color. The refraction of the eyes together with convergence and fusion has gradually been working toward this time. Now a great speed-up occurs and the whole complicated procedure rushes onward to its climax. Tremendous demands are made on the refraction, fusion and convergence. If all develops harmoniously, a pair of straight eyes, fixating well, is the result. We see them and take it all for granted.

If a refractive disability already exists, and emotional strain or illness enters the picture, the whole coöperative pattern is disturbed and the eyes may turn, usually inward.

There is then no need of waiting to see if the child "outgrows" it. The spell has been broken. The golden cord of binocular coöperation is snapped. Waiting will only allow time for irreversible muscular changes to take place, changes which complicate an already complicated situation.

Treatment must be initiated immediately on the detection of such a break. It will not repair itself. Help is demanded, and at once.

For the complicated cases showing deviations at or soon following birth, diagnosis should be followed by surgical treatment, preferably before the second year.

It is only by means of close coöperation between the family physician, pediatrician and oculist, that early treatment of turned eyes can be successfully accomplished; and that preventive medicine can be realized for the eyes of the child.

## PART V SUMMARY

HOWARD T. HOLDEN, M.D.

In concluding the discussion of the problem of the crossed-eyed child, I would first like to emphasize the fallacy of a rather common idea that the eyes will straighten themselves if left alone. It is true that we see patients with crossed eyes during childhood and youth, who as they grew older, the squint disappears but generally this so-called straightening has been at the cost of the loss of vision in the deviated eye. The deviated eye is less and less used and its power of sight is reduced gradually to a point beyond serviceable vision, with the result that the eye has become amblyopic. Blind eyes have a tendency to turn out and these may later assume a normal straight position, yet the eye is blind. An eye that is deviating is going to develop false fixation or suppression, or amblyopia, and every minute the eye is deviating we are losing the opportunity to straighten the

child's eyes. We see the harmful effect too late in many cases where the delay was upon the advice of the physician. Such advice is not compatible with our present-day teachings. Many parents are eager to delay treatment and it is up to us not to give them any loopholes for doing so.

The prevention and correction of squint are extremely important, both to the individual and the community as a whole. The handicaps resulting from the presence of squint are:

1. Lack of binocular vision.
2. Decrease or loss of useful vision in one eye.
3. Cosmetic considerations.
4. Psychological handicaps, usually manifested by a serious inferiority complex.
5. Social and economic handicaps. Children are often the subject of ridicule by their mates, hence the squint should be corrected before the child starts to school, if possible.

A squint in an adult is a handicap in securing employment, both from appearance and from lack of good binocular vision which many industries require. The prevention of squint and its handicaps requires our very serious consideration during the time when the binocular reflexes are forming, especially before the age of three. Age is no contraindication for treatment. Treatment can be started even before the age of one year. It is true that children at this age will not wear glasses, but occlusion, atropinization, and surgery can be done.

Another thing I would like to stress is that every child should have an eye examination before reaching school age. Such an examination may indicate what is to be expected of the child in school and whether or not there is a tendency for the eyes to become crossed. This examination should certainly include the vision of each eye separately, then together, and should include the cover test described by Dr. Stratton. It is my belief that we see more cases of crossed eyes which are detected by the school nurse than by physicians. People will have their child's tonsils and adenoids removed, circumcised, inoculated and vaccinated, but will neglect a more precious part of the body, either due to ill advice, or because they feel the cost is too high.

Another common fallacy in regard to crossed eyes is to claim that it is the result of fright, a fall or blow on the head, measles, or whooping cough. We agree that many cases are precipitated by some such incident that lowered the child's resistance and weakness which permitted the squint to assert itself, but we feel that the basic cause, such as refractive error, was already present and that the squint would have developed anyway at a subsequent date.

In conclusion may I emphasize the importance of an early examination of the eyes of children, and the importance of an early treatment of those

cases detected. The benefits of early correction are:

- 1. Psychological effect on the nervous system and disposition.
- 2. Improved vision of a poor eye.
- 3. Appearance.
- 4. Binocular single vision.

A DIAGNOSTIC MANEUVER IN ABDOMINAL EXAMINATION  
(Philip Cooper, M.D., and A. H. Hinshaw, M.D., Wichita, in  
*Jour. Kansas Med. Soc., May*)

A diagnostic maneuver used by one of us (P. C.) for a number of years is presented. Review of the literature and personal contact with many surgeons fail to reveal any reference to it.

The greatest significance of the maneuver is its giving the examiner definite information in regard to the location of the major inflammatory process. This process, in all probability, would be the site of the primary disease.

With the patient supine, the ends of the fingers of the examining hand are placed nearly perpendicularly against the abdominal wall with the palmar aspect of the fingers directed as desired. This may be near the umbilicus, or any part of the abdomen or flank. Gentle, then increased pressure is gradually applied in one direction. The fingers are then allowed to return to their original position, the hand is pivoted 180° on the middle finger, and pressure is applied in the opposite direction. The degree of pressure exerted in the two directions should be identical. The optimum and desirable degree of pressure in each case will obviously vary with different cases.

The patient is asked to determine in which direction he experiences the most tenderness. Usually he can immediately give a definite answer—that it hurts more “going up” or “down,” or “to the right” or “to the left,” depending on the manner in which the maneuver is being employed. If two discrete areas of inflammation are suspected in the same patient, it is of value to complete this maneuver at two distinct points.

This maneuver has been used on the surgical service on all patients who presented abdominal complaints, and has been of particular value when the usual physical examination of the abdomen left doubt as to the existence of inflammatory disease requiring surgery, or when there was some question as to the exact location of the disease process. The maneuver is of value only in cases of an inflammatory nature, or of an inflammatory process developing secondary to other disease.

In some cases it serves to determine the coexistence of two distinct inflammatory lesions.

CHLOROPHYLL WITH PARTICULAR REFERENCE TO CHRONIC  
OSTEOMYELITIS AND CHRONIC ULCERS

(Earnest B. Carpenter, M.D., Richmond, in *Amer. Jour. Surg.*, Feb., 1949)

Verdel in 1851 first pointed out the close structural similarity of hemoglobin and chlorophyll, in which the magnesium radical in chlorophyll is substituted by one of iron in hemoglobin.

The action of chlorophyll as a therapeutic agent is essentially that of a stimulant to cellular metabolism.

The cases chosen for this investigation were carefully selected from a busy orthopedic service in a prominent teaching hospital. The period covered in this clinical study was nine months. The cases selected were as follows: (1) chronic suppurative osteomyelitis, 74; (2) subacute or chronic suppurative osteomyelitis secondary to compound fractures, 25; (3) chronically infected granulatous wounds, decubitis ulcers, etc., 22; (4) varicose ulcers, six.

The chlorophyll preparations\* used were: (1) water sol-

uble active chlorophyll derivatives in isotonic solution; (2) water soluble chlorophyll derivatives in a hydrophylic ointment base; (3) chlorophyll-penicillin solution containing 2,000 units of penicillin per c.c. of water-soluble chlorophyll derivatives; (4) fine mesh gauze impregnated with water-soluble chlorophyll derivative ointment.

In the cases of chronic osteomyelitis not associated with compound fractures a thorough sequestrectomy was done followed by the instillation of chlorophyll-penicillin solution by means of indwelling catheters. In those cases involving the humerus, tibia or femur adequate fenestration of the bone was done and the catheters placed in the medullary cavity. In every case the wound was packed loosely with fine mesh gauze, with no attempt made to close the wound. Delayed primary closure of the wound was done in five to eight days. The dosage c-p. sol. was in most instances 10 c.c. into each catheter t.i.d. In every case penicillin had been used parenterally.

The group of chronic granulomatous lesions without underlying bony infection consisted mostly of decubitus ulcers. Nine such ulcers were on paraplegic patients and the results here were most gratifying. Early overcoming of gross infection, early appearance of healthy granulations and progressive epithelization were marked in every instance. Every patient selected in this group had been treated previously with various local ointments and solutions with uniformly poor results. First plain chlorophyll solution was applied as a continuous wet dressing. As soon as the gross infection had subsided chlorophyll ointment, 1/4 in., was applied daily. The general nutrition, particularly as to proteins, hemoglobin, etc., was maintained. Six cases of varicose ulcers for treatment of cases of long-standing and resistant to all other types of treatment. After cleansing the ulcer and surrounding skin with ethyl ether a thick coating of chlorophyll ointment, gauze sponges, and a pressure dressing (elastic or Tenoplast bandage) at weekly intervals. Diminution in the size of the ulcer occurred in every instance within two weeks and complete epithelization was obtained in four instances. Other clinic patients asked for the “green ointment treatment.”

EXAMINE THE APPENDICES EPIPOICAE

(A. S. Beattie, Great Falls, Mont. in *Rocky Mountain Med. J.*, April)

Sixty-five cases of disease of the appendices epiploicae are found to have been reported in the literature. In three cases the disease of the epiploic appendage was directly responsible for death because of progression of the condition to abscess formation, intestinal obstruction, and generalized peritonitis.

Operative failure to confirm a diagnosis of an acute surgical condition after routine exploration, should lead to a thorough scrutiny of the epiploic appendages and omentum for pathologic changes.

Treatment is surgical removal because of the possible progression of the condition to abscess formation, intestinal obstruction, and generalized peritonitis.

CARDIAC catheterization should only be carried out in laboratories that are adequately equipped and by operators who have been fully trained under competent supervision.

—L. B. FETTS, in *New Eng. J. Med.*

A HOG, in the shape of a man, recently undertook, upon a wager, to eat 10 lbs. of beefsteak, on which was 2 lbs. of butter; an emetic saved his life

—*Boston M. & S. J.*, Aug. 28th, 1857, via *New Eng. J. Med.*, Aug. 31st, 1950.

One or two days medication with Benzadrine sulfate 5 mg. to 10 mg., q. 4 to 6 hrs., suffice usually. Give a sedative if the Benzadrine is given after 3:00 p. m.



# DEPARTMENTS

## HUMAN BEHAVIOUR

REX BLANKSHIP, M.D., *Editor*, Richmond, Va.

### THE IMPORTANCE OF DEPRESSIVE REACTIONS

ONE OF THE MOST important problems facing the practitioner of medicine is the problem of the recognition and treatment of depression. We are apt to think of depression as an obvious and easily recognizable entity which can be diagnosed almost at a glance and effectively treated by electro-shock. This is true only of well-defined advanced cases. Even though the efficacy of electro-shock therapy in such cases is widely known and accepted, there is a surprising tendency among many physicians to delay advising shock treatment in clear-cut depressive reactions. Much of this is due to the attitude of the patient and his family who often resist any suggestion that psychiatric treatment is indicated and blind themselves to the very real danger of suicide which must be considered in handling any depressed person.

The depressed patient often seeks medical help for physical symptoms which mask his real condition, thus misleading both patient and physician. The most important point in the recognition of masked depression is to have it in mind when examining all patients, and particularly those who show no demonstrable organic disease to account for their symptoms. \*Jones recommends the following five points as of value in detecting the depressive reaction and suggests that they routinely be inquired into in the patient's examination. They are:

- (1) The history of recurrent bouts of illness.
- (2) Sleep disturbance characterized especially in retarded depression by early morning waking.
- (3) Diurnal variation in which patient with any symptoms feels worse in the morning.
- (4) Physical complaints, such as fatigue, gastrointestinal symptoms and impaired sexual functioning are common substitutes for mood statements.
- (5) A low mood, which may be expressed in terms of loneliness, self-reproach, guilt feelings, hopelessness about the future, etc.

In addition to these points, one should always inquire especially as to a history of previous manic or depressive episodes or trend toward mood swings; the possibility of any recent upsetting events which result in a reactive depression should be considered, and the doctor should be particularly

on the lookout for depression in patients between 40 and 60 years of age.

Once the diagnosis of depression is established the treatment of choice, electro-shock therapy combined with psychotherapy, should be carried out as soon as possible. Skillful management of both patient and his family is usually necessary in order to get their consent for treatment. The results, however, are well worth the effort, for of all the emotional disorders depression is perhaps the most amenable to treatment.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### THE HOSPITAL PERSONNEL VERSUS THE MEDICAL PERSONNEL

NOT MANY YEARS AGO there was no such thing as a hospital administrator, a board of trustees, an executive lay board or any other type of hospital promoter other than the M.D. This system has been greatly changed today. Medicine has become so voluminous and the business enterprise of the hospital has so much increased that we are now battling for position as to whether we are lay or professional people. During the last twenty years there have arisen too many would-be dictators in the hospital world. It even goes so far as to involve various groups in the medical personnel such as nurses association, rules and regulation, versus the doctors. Even more recently, hospital administration has become a profession in itself, the teaching and training for which is more elaborate each year.

One sometimes wonders if these individuals are taught much about how to get along with the doctors and nurses. They seem to be schooled well in how to get along with the trustees—mostly lay people. It could be taken that those responsible for the curriculum of the medical administrator are paying the profession a compliment by assuming that the professional personnel present no problem and are always ready and anxious to cooperate, while the lay trustees are difficult to deal with.

To remedy the bad situation which now exists in practically all institutions, that of a lack of cooperation between all of the various groups of the hospital, first the medical doctor must come down off his pedestal of self-opinionation. The lowly maid on the hall must recognize the fact that her responsibilities are important, that she is not working in a factory but rather helping to create a wholesome atmosphere where patients may regain their health. The business administrator who, we will admit, has a difficult job should recognize the fact that unless he is able to coordinate the various interests in the hospital, then he can not succeed. Keeping a perfect set of books and

\*Depressive Reactions: Their Importance in Clinical Medicine. Robert O. Jones, Halifax, N. S. *Canada M. A. J.*, 60:44-48, January, 1949.



a perfect inventory is not his main duty as an administrator. He should further remember that it could be possible that the heads of some of his departments might also have some business judgment. Following some suggestions from these department heads might do a great deal toward gaining their cooperation, to the general good of the institution. He should not make any difference in the treatment of the administrative staff and the professional staff. In short, he should be father confessor for the whole institution. He should keep on hand a barrel of oil to pour on troubled waters.

At this writing the nursing personnel of almost every hospital is divided between graduate nurses and practical nurses. This division is deplorable and should never have been allowed to creep in, and never would have had the leaders of the graduate nursing profession been far-sighted. Since it is here, however, it ill becomes graduate nurses to look down on practical nurses; instead they should do everything they can to increase the knowledge, wisdom, spirit and ethics of the practical nurses, for they are becoming far too numerous and rendering far too large proportion of the nursing care to be ignored.

Unless strenuous effort is made by all who are concerned in operating hospitals, there is grave danger that the hospital of the future will become a departmentalized, industrial organization, with hours, specified duties, union rules and limited responsibilities, instead of a *blessed temporary home* for the sick man in which to recover.

## PROCTOLOGY

RUSSELL BUXTON, M.D., *Editor*, Newport News, Va.

### PROCTOSCOPIC EXAMINATION

THE IMPORTANCE of a proctoscopic examination is indicated by the fact that a great many of our very largest clinics have reported an imposing series of cases of malignant tumor of the rectum in patients who have been subjected to a hemorrhoidectomy a short time before the malignant nature of the disease condition was discovered. There is no doubt that many of these patients had hemorrhoids and that the hemorrhoids caused some of their rectal bleeding, but how embarrassing it must be to the operating surgeon to have the patient turn up with a malignant lesion shortly after a hemorrhoidectomy! This is particularly true when such a tragedy may be avoided in 75 per cent of instances by the following simple method. Either at the time of operation or prior to operation, the patient may be subjected to proctoscopic examination without difficulty, and the lower 10 in. of the large bowel examined and found to be either free of disease or to be the site of a malignant tumor.

In addition to the malignant lesion which can be found at or before operation by proctoscopic examination, non-malignant lesions may also be found, in the nature of polypi, ulcers or adenomata. These lesions can be treated through the proctoscope or as necessary by medical or surgical means.

Preparation for proctoscopic examination should be simple and can be accomplished in the following manner. The patient is instructed to take a saline enema the night before the examination, using some 4 to 6 quarts of warm water with a level tablespoon of salt in each quart. Early in the morning of operation, an enema of a pint or quart of the same solution will insure in most cases that the bowel will be clean. It is felt that a mild antispasmodic and sedative may be given and also, before the procedure and this makes the patient feel a great deal better. The proctoscopic examination may be done in the Sims' position, or in the knee-chest position, or a special table may be used. Any of the positions are satisfactory as long as the physician is used to one or the other. One type of case needs special preparation and that is the one in which there is an acute fissure with a spastic sphincter. In these cases a strong laxative, preferably castor oil, should be given before proctoscopic examination, because otherwise the bowel will not be cleaned out. Also, the patient with a fissure will need more sedation and in many cases it will be desirable to treat the fissure first and then use the proctoscope when the patient is in a more receptive mood.

It is imperative that a digital examination be done prior to proctoscopic examination and that the physician be well versed in the use of the proctoscope, as otherwise he may not only cause the patient a great deal of unnecessary pain but also may get into serious difficulty doing this examination.

The use of the proctoscope should not be limited to proctologists but should be limited to those who are interested in learning how to use the instrument properly and in seeing that their patients receive adequate examination from the proctological standpoint.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### LOW DOSAGE POTASSIUM THIOCYANATE IN THE TREATMENT OF HYPERTENSION

A GROUP of Jersey clinicians report encouragingly on the treatment of hypertensive patients with small doses of tricyanate in combination with less toxic drugs.

There are now five schools of thought as to therapy for hypertension: The first group, no therapy until the cause is determined; the next three groups agree that the b. p. should be lowered even though we cannot prove that this is necessary or desirable, differing, however, as to means for accomplishing this end. The first of these three groups uses one of many drugs: 1) barbiturates, 2) niacin, 3) CNS., 4) xanthines, etc. Next are the dietotherapy advocates, and fourth are the adherents of sympathetomy, the surgeons—a vociferous group. Last comes a school, similar in many respects to the first or “hands off” group, in that they prescribe no medication but do advocate and practice psychotherapy.

We feel with others, that by lowering the b. p., we stave off a rapidly progressing arteriolar sclerosis, cardiac enlargement and heart failure. Therefore, we were very much interested in the use of a new sugar-coated tablet\* containing potassium thiocyanate (48.7 mgms.), sodium nitrite (32.5 mgms.), Rutin (10 mgms.), and pentobarbital-sodium (16.2 mgms.) This dosage of thiocyanate is far below that necessary to bring the blood concentration to the toxic level.

The dilating action of the nitrites is well-established, sodium nitrite within five minutes after ingestion and acts for one to two hours. Pentobarbital-sodium acts for a moderate time with rather rapid detoxification in the liver. Thiocyanate is capable of relaxing smooth muscle. In this experience and in the experience of others, the incidence of toxic reactions is small.

Rutin, a flavone glucoside, decreases capillary fragility (Griffith) in subjects in whom this fragility is initially increased. Thiocyanate tends to increase this fragility; hence Rutin should counteract this effect. Though now it is rare for a Rx for more than one drug to be written, we feel justified in combining drugs in the hope of obtaining a total greater effect.

For this study, a group of 24 patients who had been followed by us for two years or longer with the diagnosis of essential hypertension was chosen. These patients had had many other “accepted” therapies. In all cases unilateral renal disease had been ruled out. The fact that this new therapy’s efficacy was being compared to other “new therapies” used in the past would tend to rule out psychogenic effects. On placebo b. p. rose at once.

All b. p. were taken weekly with the patient seated, after rest, when the patient had had no medication in a. m. for 12 hours; 13 m. and 11 f., ages 20 to 68. All were given two tablets t.i.d. except 12 and 19 who received higher dosage because of a failure to obtain a thiocyanate level above two mms. per cent on the original dosage.

1. A. E. Parsonnet et al., Newark, in *Jl. Med. Soc. N. J.*, Nov., '50.

Four were given placebos for variable lengths of time, each an exact replica of the therapeutic tablet.

An average reduction of 30 mm. s. and 15 mm. d. was considered good; of 20 s. and 10 d. fair; good response in 11, fair in eight.

Hypotensive effects were good or fair in 19 of 24 patients. Five of these 24 would be considered as having the same good or fair hypotensive effect under other therapy. Two of these five were on straight potassium thiocyanate therapy.

Placebos were used in four cases and in all of these, within two to eight weeks, it was obvious to both the patients and the investigators that treatment was failing. Shortly after the active therapy was resumed, the b. p. and subjective symptoms returned to placebo levels with satisfaction to all concerned.

Only two hypotensive effects were obtained with other generally accepted therapy. Both of these were on low-sodium diets. Subjective complaints were relieved in almost all cases, and the improvement here was well above that which would be expected from the hypotensive effect.

Anginal pain as a thiocyanate sensitivity reaction was noted. The infrequency of toxic or sensitivity reactions is emphasized with this preparation. The need for periodic K thiocyanate blood level determinations is again demonstrated.

\*Tablets “Taraxad” furnished through the courtesy of the E. L. Patch Co., Boston, Mass.

#### ACTIVITY OF CASHEW (ANACARDIUM OCCIDENTALE) NUTSHELL OIL IN HOOKWORM DISEASE

HOOKWORM DISEASE is nothing like so much of a problem with us as it was 30 and 40 years ago; but it is still with us to a degree sufficient to make welcome what a group of Brazilians has to say for oil from the shells of the cashew nut.

Human ancylostomiasis (hookworm disease) was cured in 14 of 22 cases by repeated oral applications of cashew nutshell oil. All the five refractory cases belonged to the same family, in which some other individuals refused treatment. The poor results in these cases may be explained by the extremely high number of parasites (up to 45,000 eggs per Gm. of feces) plus the chance of domestic reinfection.

It seems probable that the optimal clinical doses are above those used in our experiments, also that better results could be obtained by shortening the interval between the administrations or by a combination of CNO with hexylresorcinol, in view of the fact that the ascaricidal activity of hexylresorcinol is increased by its combination with cashew nutshell oil.

1. F. W. Eichbäum et al., Sao Paulo, Brazil, in *Amer. Jl. Dig. Dis.*, Nov., '50.

With an average total dose of 13 Gm. divided in three single doses given at intervals of two weeks, a complete cure was achieved in 64 per cent of the cases. In the remaining 36 per cent the number of eliminated eggs was reduced by 78 to 99 per cent of the initial count.

In three cases of *Ascaris* and three cases of *Trichuris* infestation very marked vermifugal effect was observed.

Cashew nutshell oil has a mild purgative effect. No toxic symptoms were observed.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### SIMPLE MEANS PREVENTING DEVELOPMENT OF A FLUID-ELECTROLYTE PROBLEM

PRETTY NEARLY every "problem" that specialists present for consideration is represented to be difficult in the extreme. Lyon<sup>1</sup> says the fluid-electrolyte balance can, by the use of simple means, be prevented from becoming a problem, and that in case it becomes a problem, the problem can be solved by simple means.

The usual patient is in balanced state at the time of operation. Maintenance of this state until the patient is able to ingest all that is needed to maintain this balance can be accurately accomplished by the simplest of measures. The basic requirements are a reliable set of weighing scales, an observing nurse with a measuring bottle, and an understanding by the doctor of simple replacement principles.

The primary guides are the determination of body weight, of fluid intake and output, and of the electrolyte losses from the skin and lungs, the gastrointestinal tract and the kidneys. The simplest of these three, *daily measurement of the body weight*, is the most important, because day-to-day changes in body weight represent gains or losses in the total water content of the body.

The effects of dehydration are not observable clinically until at least 6 per cent of the body weight is lost. However, more to be feared is the insidious accumulation of fluid, leading to deposit of water at the lung bases, perhaps with hypostatic pneumonia, long before edema becomes obvious. In anuria or oliguria daily weight measurement is the great life saver, protecting against overhydration during the two weeks of recovery—the period required for repair of reversible acute renal lesions.

Daily determination of weight permits estimation of fluid losses. Losses of great importance not only because they result in fluid deficit but because electrolytes in these secretions are lost and body elec-

trolyte stores hence may become rapidly depleted. Accurate estimation of such losses is quickly obtainable at the bedside by noting a fall in weight greater than that estimated from the intake-output record.

Nine out of 10 patients may be placed directly on the scales at the bedside. The tenth can be weighed on a litter of plywood, made to fit the platform of the scales, and a canvas stretcher.

Measurement of intake and output is next in importance. Output by urination, vomiting, gastrointestinal suction, biliary T-tube drainage, or diarrhea is to be recorded. The intake-output record and determination of body weight thus act as a check-and-balance system workable in any hospital or in the patient's home.

The majority of replacement solutions are usually in stock in a hospital supply-room. If the exact solution needed is not on hand two or more solutions which together will provide the proper amount and content of replacement fluid may be given consecutively.

The salt percentage in sweat ranges from 2 gm. to 8 gm. per liter. Loss from this route may be the main cause of serious salt deficiency. When there is visible sweat, daily losses by that route must be expected to be at least 500 c.c., plus insensible losses of 800 c.c., and may be much larger. Adequate replacement requires the use of half-normal saline solution of 4/5 gm. per liter. Changes in body weight plus knowledge of probable salt losses in sweat, provides a basis for estimating the amount and content of solution replacement.

Gastrointestinal losses of salt and water by vomiting, by Wangenstein suction, by T-tube drainage, or by diarrhea may be replaced with solutions containing 6 gm. of salt per liter. With intestinal obstruction, if the usual 9 gm. per liter is used for replacement, it must be administered in conjunction with dextrose in water to provide the necessary 6 gm. per liter relationship. This also holds true for Ringer's solution, which contains 9 gm. of salt per liter as well as small amounts of Ca and K. Quantitative replacement of gastrointestinal losses at the time of loss is mandatory.

Adequate replacement of fluid and electrolytes requires nothing more than the use of simple and easily available measures. They are measurement of body weight, measurement of intake-output, and knowledge of probable electrolyte content of fluid losses.

Adequate replacement solutions are:

For insensible losses—dextrose in water.

For gastrointestinal losses—6 gm. of Na Cl per liter of water to replace the first 6 liters of fluid lost. Following this, one gm. of K Cl plus 1 gm. of calcium gluconate (10 c.c. of 10 per cent solution) is added to each liter.

1. R. P. Lyon, San Francisco, in *California Med.*, Oct., 1950



For observable perspiration—half-normal saline solution.

For urine excretion—dextrose in water for 48 postoperative hours. With urine volume of 2 liters and adequate kidney function, one liter of half-normal saline daily thereafter, in addition to dextrose in water.

Use of normal saline solution parenterally in the early postoperative period is contraindicated in the absence of extrarenal salt losses.

## UROLOGY

### SOME UROLOGICAL CONDITIONS OF GENERAL INTEREST

WHIPPLE<sup>1</sup> recently discussed before his local medical society some of the highlights of the recent American Urological Convention held in Washington. Some of the conditions he dealt with are of such general concern to doctors that it seems well to pass the information on to our readers.

Gentle urethral dilatation is still the treatment of choice of urethral strictures, inflammatory or traumatic. Once in a while a stricture requiring almost daily dilatations is encountered, and in such case internal urethrotomy followed by a large indwelling urethral catheter for a period of 10 days to two weeks merits a trial, before considering radical excision.

A new operation was presented for the cure of urinary incontinence following surgery of the prostate and in particular transurethral resection: two-thirds of the anal sphincter are split parallel to its fibers, the anterior segment is divided at one end, swung around the membranous urethra and re-sutured to the point of division. The author reports good success with this operation.

Cystectomy for carcinoma of the bladder offers no better prognosis in the invasive group and decidedly comes out second best in the non-invasive group.

In carcinoma of the prostate best results to date are achieved through early recognition followed by total perineal prostatectomy including removal of the seminal vesicles. Less than five per cent of the cases are seen early enough so it behoves all of us to listen to that oft-repeated phrase about doing routine rectal examinations in all men over 40 years of age.

When urinary symptoms become manifest due to this condition, it is too late to consider the patient in terms of cure. Then, palliation is the best we can offer, namely, transurethral resection if obstructive symptoms are present and estrogens to ease metastatic pains. There is a divergence of

opinion whether to initiate estrogens as soon as the diagnosis is made or to wait until pain of metastatic bone involvement arises. In general prostatic cancer is slow-growing.

Examine the testicles. In spite of the accessibility of the testicle to palpation, many testicular tumors are missed until far advanced. The present five-year survival rate of seminoma, the most common type of testicular tumor, is 60 per cent.

A report was made of research work done on the dissolubility of urinary calculi. One to three per cent isotonic solution of a synthetic amino acid used for cleaning boilers has been found to be much less irritating than our previous best medium, Suby solution, and three times more effective in dissolving stones. It works by binding calcium in a water-soluble form. Stone-dissolving techniques present the following problems: 1) it is impossible to tell in advance which stones will respond, 2) many times only the outer crusts will dissolve leaving a refractory core, 3) and it requires constant irrigation with the medium, which means a bed-ridden patient to keep the tubes in place. If no significant progress is noted at the end of one week more positive methods of treatment should be relied upon. In the reversible anuric secondary to transfusion reactions, crush syndrome, metallic poisoning, sulfonamide intoxication, and so on, the artificial kidney is being badly hooded far and wide, but it is a machine of limited practicality. Staff members of one large city center say they can thank it for bringing them a large number of cases, cases that are treated by methods available to ourselves, while the machine itself is left unused—a sort of museum piece. Over 90 per cent of these cases with reversible uremia can be salvaged by the judicious use of fluids and electrolytes; in the absence of fever, vomiting or diarrhea daily loss of fluid in the adult to be replaced 1500 c.c.

Urologists are now advocating operation as soon as the diagnosis of polycystic kidneys can be established, rupturing as many cysts as possible and painting the serous surfaces of the larger cysts with Zenker's solution or strong silver nitrate. It is felt that surgery relieves pain, improves function and prolongs life.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., Editor, Chester, S. C.

### MANAGEMENT OF TETANUS WITH MEPHENESIN

A GROUP of Charleston doctors<sup>1</sup> report mephenesin as having proved helpful in the always dreadful disease, tetanus.

A 28-year-old Negro admitted Dec. 6th, 1949. Two weeks prior to entry he sustained an irregular

1. R. U. Whipple, Manhasset, N. Y., in *Med. Times*, Aug.



8 cm. laceration of the left foot. The wound was sutured by the company physician. No tetanus antitoxin was administered. Three days prior to hospital entry he developed mild trismus.

He was given tetanus antitoxin 60,000 units i.m., 1000,000 units on the following day, and 50,000 units was infiltrated around the wound. Penicillin G was given, 100,000 units i.m., q. 3 h. from Dec. 7th to 11th and procaine penicillin 300,000 units i.m., b.i.d., from Dec. 11th to 19th. In addition, dihydrostreptomycin .5 gm. b.i.d. was given from Dec. 11th to 19th.

It was decided upon entry to attempt to control the manifestations of his disease with mephenesin, 1 gm. q. 4 h., plus pentobarbital or secenal sodium .1 gm. q.i.d.

Because of difficulty in swallowing the tablets of mephenesin (Tolserol) the elixir containing .1 gm.-c.c. was substituted. He was begun on a basic dosage of 32 c.c. q. 3 h. Additional amounts as needed. A quantity of the medication equal to 90 c.c. was left at the bedside, and the patient was instructed to take p.r.n. to alleviate muscular contractions. Repeated dosage q. 2 h. produced optimum control of symptoms. Dec. 15th 5 c.c. q. 2 h. day and night was ordered. The highest daily dosage employed was 29 gm. The total amount of the drug given was 329 gm.

On Dec. 14th the patient was able to comfortably eat a soft diet. At all times following this spasms, dysphagia, muscular irritability and pain could be promptly brought under control by a suitable dosage of the drug. By the 17th day it was possible to reduce the dosage of medication.

Because extensive debridement was not possible without major permanent functional impairment of the foot, the wound was treated with hydrogen peroxide soaks and a posterior plaster splint.

A 12-yr.-old schoolboy seen in hospital Nov. 25th was stiffness of neck, increasing muscular tenseness, inability to open the mouth widely—symptoms first noted seven days before. His health otherwise had been good. He had never been immunized against tetanus.

There was a healing abrasion with some mild infection on the lateral aspect of the right knee and a similar small area on the lateral aspect of the right ankle—incurred 3 weeks before in a fall while playing in the street.

The diagnosis tetanus was made and the local wounds were debrided. 15,000 units of tet. antit. was injected subcutaneous'y at the local sites. In addition, he was given 200,000 units of tet. antit. in the next 48 hours, and 10,000 units per day were continued thereafter for five more days. He was started on penicillin 100,000 i.m. q. 3 h., and me-

phenesin in doses of 1 gm. q. 4 h. was given by mouth. An occasional dose of sodium pentobarbital was administered p.r.n. for relaxation. After beginning mephenesin he had no more tonic convulsions and within the next 36 hours his jaw became relaxed enough to take soft food. He was considerably relaxed after having been on mephenesin for 72 hours and from then on required only two or three i.m. injections of sodium pentobarbital for relaxation. After 11 days mephenesin was discontinued. Except for mild stiffness of the neck muscles the muscular system was entirely relaxed at that time. His convalescence was uneventful and he was discharged 12 days after therapy was instituted for his tetanus. He made a complete recovery without residua's.

In two cases of tetanus of moderate severity control of the symptoms was adequate by the use of mephenesin orally. In both only moderate dosage of barbiturates was found to be necessary to relax the patient to a degree sufficient to permit oral feedings, and to completely inhibit convulsions. Experience of these two cases and of the use of the drug in Parkinsonism and various other states of spasticity, indicates that fairly large doses can be used without hazard. While not as complete relaxation as can be achieved as by tubocurarine was induced in these patients, such relaxation is not necessary to control the tonic convulsions or to relax the jaw sufficiently to permit the patient to eat and drink. We will in the future choose to use mephenesin and moderate dosage of barbiturates to give sedation as a method of choice.

These two cases emphasize again the duty of administering tetanus antitoxin to every patient coming with a wound contaminated by street dirt and any other dirt contaminated by excreta—which means most dirt.

*Always* (1) inject a minute portion *into* the skin to test the reaction; (2) have epinephrine in a syringe at hand; (3) have the patient *lie* under observation for a half-hour after receiving the antitoxin.

Twenty years ago a fine young man, not so far from Charlotte, lost his life, through these precautions not being observed.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### MANAGEMENT OF UNILATERAL CLEFT OF THE PALATE\*

CLEFTS of the lip and palate are among the most distressing of developmental anomalies. Early repair of the lip defect is generally practiced so as to correct the hideous appearance which is unacceptable to society and would interfere with the

\* Vince Moseley, M.D., et al., Charleston, in *Jl. S. C. Med. Assn.*, Oct.

personality development of the child.

The time best suited for repair of the palate cleft is most controversial. As the palate cleft is of particular importance in preventing proper speech, for many years surgeons have attempted to make the repair between the age of 18 months and 2 years before speech habits were developed. Due in great part to the inadequate tissue and the technical difficulties of making a repair at this age, the time has gradually been extended to three, four, and even five years. Studies at the University of Minnesota have thrown important light upon the subject. By x-ray examination and other methods it has been demonstrated that early repair of the palate defect interferes with the normal development of the maxilla and upper face, resulting in malocclusion of the teeth, and other contour deformities. Taking into consideration a great many factors, it is advised that major palate repairs be postponed until the end of the fifth year. Without harmful effect, the cleft of the hard palate may be partially closed in infancy by mobilizing a mucoperiosteal flap from the vomer and suturing it to the edge of the palatal bone. The major palate repair is deferred until the end of the fifth year.

L. C. W. Waldron, M.D., D.D.S., Minneapolis, *Plastic & Reconstructive Surgery*, April.

## SALINE SOLUTION BY MOUTH IN TREATMENT OF BURN SHOCK

THE SURGERY STUDY SECTION of the National Institutes of Health has recommended to the Surgeon General of the Public Health Service that the use of oral saline solutions be adopted as standard procedure in the treatment of shock due to burns and other injuries in the event of large-scale civilian catastrophe.

Orally administered salt solutions have been employed in the treatment of burns at the University of Michigan Hospital, Ann Arbor; at the Wayne County General Hospital, Eloise, Mich.; and at Parkland Hospital, Dallas, Tex. This clinical experience has been convincing of the value of this method of treatment of shock incident to burns, fractures, peritonitis, and acute anaphylactoid reactions.

The most palatable salt solution is made by dissolving 3 to 4 grams of sodium chloride and 2 to 3 grams of sodium citrate in each liter of water. If sodium citrate is not available, baking soda may be substituted for it.

In case peripheral circulatory collapse is profound, IV injection of Hartmann's sol. (Lactate-Ringer's) or plasma must be used until peripheral blood flow has been reestablished. In addition to the salt solution or plasma IV, whole blood is given concurrently in any case of peripheral circulatory collapse.

The slightly hypotonic salt solution is the only drinking fluid permitted until the edema of the injured parts begins to subside. During hot weather may be necessary to allow some non-salty water.

As much as 10 liters of the hypotonic salt solution have been drunk in 24 hours by adults severely burned. Since salt solution has been substituted for water, as a drinkable fluid, no burned person who has lived for longer than three hours after being admitted has become anuric. The "early toxemia phase" of the burns has also failed to appear and the osmotic concentration of the plasma electrolytes has been well maintained.

The Surgery Study Section letter to the Surgeon General, dated September 16th, and endorsing these measures, is signed by professors of surgery at Western Reserve, Stanford, Chicago, Emory, Texas, Indiana and Minnesota.

## A RESIN-GASTRIC MUCIN MIXTURE IN THE MEDICAL MANAGEMENT OF PEPTIC ULCER

(F. Steigmann & R. B. Schleinger, Chicago, in *Amer. J. Dig. Dis.*, Nov., '50)

The most important application of resins to date has been their use for the neutralization of the hydrochloric acid in gastric juice, without interfering with the acid-base balance. Several clinical studies have demonstrated their efficacy for this purpose.

Thirty patients with gastroduodenal ulcer were observed for periods of five to 15 months while on a regimen in which a new polyamine anion exchange resin-gastric mucin mixture (Resmicon) was used as the antacid. Except for two patients who did not like the taste, all patients took this substance (12 to 16 tablets daily), and in no case was there untoward result.

Subjective improvement occurred within the first week in the majority of cases; objective improvement (by x-ray and gastroscopy) within two to four weeks on most of these checked.

During the observation period four patients were dropped from the study. Of the remainder only three had mild recurrence of symptoms during a period of observation of 12, 13 and 15 months, respectively.

## WHO KNOWS ABOUT RICHARD WISEMAN?

Perhaps the first accurate clinical data we have of tuberculosis of bones were given by the royal surgeon, *Richard Wiseman, the father of English surgery*. In his paper entitled "Seven Chirurgical Treatises," published in London in 1676, he applies the term tumor albus (white swelling) to a tubercular joint, pointing out that this is directly due to scrofula, which he styles "King's Evil," having had wide experience in this line as physician to four of England's monarchs.

R. B. Tewler, in *Medical Register* Richmond, May, 1897.

ONE OF THE LESSONS OF HISTORY is that systems of thought and belief are destroyed, not by attacking them, but either by a process of internal decay or by the appearance of another and more satisfying system which gradually undermines it.

—Bernard Hart, in *British Med. J.*, Sept. 9th

CORYZA AND BRONCHIAL CATARRH can be aborted by inhaling the vapor of a 10% chloroform solution of menthol.

—*Medical Register*, May, 1897.

## PRESIDENT'S PAGE

### YOUR PROFESSION IS ALSO YOUR BUSINESS

TO ONE who dedicates his life to the best in health for the human family, it might seem amiss to write about business. Indeed, there was a time when the subject of this article would have been not only amiss but an undesirable contamination; whether for better or for worse, I am sure there could be some argument. The medical man of today finds himself confronted with both medical and business problems. While his medical problems far outweigh his financial problems, and this is as it should be, yet the financial problems are of sufficient importance to his welfare to warrant some study and much worry.

It is not uncommon to hear the elders in any profession talk about "the good old days." Just what they mean by this is seldom explained in their conversation. If it could be summed up in one thought, the author believes that their meaning represents a state of mind. In those days an individual enjoyed both the responsibilities and the privileges of life without dictation from the federal government or aid from the local welfare office. A man was proud of the fact that he had responsibilities which he met with a personal satisfaction. At that same time, a man's authority made it possible for him to meet these responsibilities of life; therefore assets and liabilities were equal, the final result being a contented mind housed in a satisfied body.

What does this have to do with business and medicine? In the days when the medical profession was much younger than it is today, only the wealthy studied to become a doctor. It was not necessary for them to make a living out of the income from their profession, but appreciative patients would almost invariably make some effort at remuneration, usually depending upon and according to the ability of the patient. Almost all patients in those days were grateful for the service rendered by their doctor. There were a great many fine expressions of faith and brotherly love in the service then rendered by the medical man.

The new system of medicine has changed both in personnel and opportunities. An ambitious young man or woman can today acquire an M.D. degree if he or she be willing to be persecuted for a long enough period of time. But a stout heart is a requisite. In winning this degree many incur a tremendous financial debt, to be paid, if at all, out of earnings from the practice of medicine. Too, the present requirements far exceed the requirements in the olden days. A \$2,000 automobile in the place of a horse and buggy, a secretary and a nurse who were never heard of in the private physician's office, a telephone and all of the modern equipment, costing from 10 to 50 times as much as the cost of the equipment usually used by the early physicians. Office rent was practically nil because a doctor generally had one room of his dwelling or a special smaller detached building for the purpose of treating his office patients. It will be seen, therefore, that *money, money, money* must be forthcoming if the young man of today ever succeeds in the practice of medicine.

It would not be amiss if all of our educators were thoroughly convinced of these facts. If they were, they would incorporate in the medical curriculum a period of study, designed to teach the young, would-be doctor that he must apply some business principles in the practice of his profession if he is ever to succeed. It is pathetic to see a young doctor starting in practice, treating all the dead-beats in town and yet too bashful to mention to them anything about pay. The author has repeatedly heard young doctors say that they *just could not* ask a patient to pay a bill and that they would stammer, stutter and blush all over, if they had to request



a patient to pay cash for an office visit. This system of practicing medicine by a physician for the first few years creates such a financial hardship upon him that oftentimes the pendulum swings too far in the other direction and he becomes mercenary, not through choice in the beginning, but through necessity. Once he has tasted of the fruits of great financial success, he is *very loath* to give it up, and this is a pitfall into which too many of us fall.

The young doctors should be taught before they open their offices that efficient medical service is worth the same to the patient whether paid cash for or charged on the books. This would obviate that so-called starvation, depressing and sometimes ethics-destroying period through which so many young doctors pass. The president's advice to all young doctors is to charge a fair fee—no more, no less—and see that your patients pay you promptly.

—R. B. DAVIS.

#### THE RELIEF OF PAIN BY INTERRUPTING NERVE PATHWAYS (Exum Walker, Atlanta, in *Jl. Med. Assn. Ga.*, Nov., '50)

Careful consideration should be given to the emotional behavior of the patient. It is necessary to judge the patient's problem as a whole and decide if pain alone is the major factor. To be considered is the patient's reaction to his pain, or simply what it means to him.

Section of a peripheral nerve trunk seldom affords any lasting relief and, therefore, is seldom indicated. For regional pain division of cranial or spinal posterior roots offers an effective means of abolishing pain in many instances. Pain involving more diffuse areas may require section of some central pain-pathways. The anterior spinothalamic tract conveys pain and temperature impulses and is located superficially so that it may be selectively divided in the spinal cord, medulla or mid-brain. This permanently abolishes the pain sense and temperature perception below on the level on the opposite side, leaving the ordinary touch perception and other functions intact. No serious disability results and the patient can perform normal activities. This procedure is useful whenever the pain is unilateral.

Bilateral cordotomy can be performed, but the risk of causing bladder paralysis must be considered. Bilateral cordotomy is principally used in cases of intractable pain due to cancer.

The technic of cordotomy has been greatly simplified so that it has come to be a relatively minor procedure.

Visceral pain fibers are included in the sympathetic chains, and an appropriate excision will denervate most of the thoracic, abdominal and pelvic viscera. Also many types of vascular pain and pain due to nerve injuries may be controlled by interrupting the sympathetic nerve supply to the region involved.

Prefrontal lobotomy's use in the relief of pain is a recent innovation. It does not abolish pain perception, but after bilateral lobotomy the patient is no longer concerned about his pain and will usually not mention it or ask for relief. This operation leaves a definite personality defect and should rarely be performed except as a final resort. Unilateral lobotomy is less effective, but has the advantage of leaving so little personality defect that it usually goes undetected.

Sciatic pain is usually due to a lesion of an intervertebral disc and can be controlled by removal of the disc; however, in some instances it is necessary to divide a nerve root or perform a cordotomy. Brachial pain or neuritis is most commonly due to an iv. disc lesion in the cervical lesion; treatment is essentially analogous.

Cervico-occipital pain, probably due to some irritative trauma of the upper cervical nerves, is very common and this kind of pain and headache begins in the suboccipital region and is often associated with suboccipital tenderness

and aggravation of pain on motion. It can usually be relieved by division of the second and third cervical sensory nerve roots.

#### PHYSICAL TREATMENT OF BACKACHE

(F. J. Kottke, Minneapolis, in *Jl. A. M. A.*, April 16th)

Treatment of low-back pain aims to relieve the pain and the muscle spasm. All types of heat are useful to relieve deep pain or muscle spasm. Short-wave diathermy is in general preference because of its ease of administration. Woolen hot packs, heated in boiling water, cent-ifuged nearly dry and then quickly applied are the most effective method of relieving muscle spasm. These packs feel extremely hot since they are applied at a t. of about 80 C. (176 F.), but because of their low water-content there is too little heat to blister the skin. After the application of heat, massage is used. Frequently, nodules may be palpated at the sites of tenderness, which disappear with massage. Massage is begun gently and increased in pressure gradually as tolerance increases.

Neither heat nor massage is able to stretch muscles out to their full resting length. Therefore, these forms of treatment are followed by passive or active stretching exercises to increase suppleness. Stretching exercises must be vigorous and must be designed to stretch the muscles which have been held in a shortened position. The muscles most frequently involved in backache are the erector spinae and the extensors, abductors and flexors of the hips. Any muscles may be involved in the individual case. Movement of these muscles through the range from full contraction to complete relaxation prevents the development of connective tissue which would tie the muscle fibers down with fibrous contractures and perhaps lead to a permanent deformity.

#### BRAIN TUMOR

(J. H. Globus, New York, in *Jl. Mt. Sinai Hosp.*, Mar.-Apr.)

Attention is drawn to data which point to the somewhat lengthened survival period in operative cases and to the exceptional instance in which a longer and useful survival period followed surgical intervention. These data serve as a strong argument in favor of surgical restraint and greater coöperation between the neurosurgeon and the seasoned neurologist. Such joint function would insure against some avoidable errors and help in the selection of cases most promising for successful surgery.

*It is left to the mature reader to consider the importance of careful investigation of the individual case of brain tumor-suspect before a final decision is made in favor of surgical intervention. It follows that a thorough screening by a competent observer in the field is imperative to exclude such instances in which surgical intervention is but adding insult to injury.*



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PRELIMINARY REPORT ON PROGRAM OF MEETING  
OF TRI-STATE MEDICAL ASSOCIATION  
Columbia, S. C.—February 19th and 20th

THAT the members, and those who may be interested in becoming members, of the Tri-State Medical Association of the Carolinas and Virginia may know two months in advance what mental pabulum will be served at the coming meeting. Dr. W. R. Wallace, Chairman of Program Committee, supplies this information for publication now.

The final program will show a few modifications, additions and subtractions.

Monday, February 19th:

Call to Order—The Secretary of the Association.  
Invocation—Dr. Fred V. Poag, Pastor, Shandon Presbyterian Church.

Address of Welcome—Dr. T. D. Doterer, President  
Columbia Medical Society.

Honorable James F. Byrnes,  
Governor of South Carolina.

Response—Dr. Russell Buxton, Newport News,  
Va.

Symposium of General Practice—Moderator, Dr.  
G. F. Bond, Bat Cave, N. C.

Subject to be supplied.

Dr. Albert Persons, Duke University.

Cortisone in Rheumatoid Arthritis — Dr. Oscar  
Swinford, University of Virginia.

The Diagnosis and Management of Polyps of the  
Colon and Rectum—Dr. Isaac Harris, Durham,  
N. C.

Psychosomatic Medicine—Dr. J. J. Cleckley, Char-  
leston, S. C. Discussion led by Dr. James Asa  
Shields, Richmond, Va., and Dr. O. R. Yost,  
Orangeburg, S. C.

Diagnosis of Acute Pancreatitis—Dr. Walter G.  
King, Greensboro, N. C. Discussion led by Dr.  
Wm. H. Prioleau, Charleston, S. C.

Management of the Second and Third Stages of  
Labor in the Various Types of Breech Presenta-  
tion—Dr. Henry J. Langston, Danville, Va. Dis-  
cussion led by Dr. W. A. Hart, Columbia, S. C.,  
and Dr. Oren Moore, Charlotte, N. C.

Fancies, Fads and Facts About Peptic Ulcer—Dr.  
T. Neil Barnett, Richmond, Va.

Some Problems in Orthopedics—Dr. George Daw-  
son, Florence, S. C. Discussion led by Dr. Harry  
Winkler, Charlotte, N. C.

Dr. C. C. Odom, Superintendent State Hospital,  
Columbia, S. C. Discussion led by Dr. H. R.  
Masters, Richmond, Va., and Dr. W. Ray Grif-  
fin, Asheville, N. C.

For the Night Session and Annual Banquet the  
guest speaker will be Honorable James H. Ham-  
mond, Columbia, S. C.

Then the President will deliver his address (subject not yet in hand).

Tuesday, February 20th

Panel on Surgery—Dr. Wm. C. Cantey, Columbia, S. C.; Dr. Robert Payne, Jr., Norfolk, Va.; Dr. George Paschal, Raleigh, N. C.; Dr. George McCutchen, Columbia, S. C.

Psychiatric Case-taking — Dr. John F. Williams, Richmond, Va.

Use of Banthine in the Treatment of Peptic Ulcer—Dr. Keith S. Grimson, Durham, N. C.

Some Advances in Surgery in 1950—Dr. Furman T. Wallace, Spartanburg, S. C.

Some Live Public Health Problems—Dr. Ben F. Wyman, Columbia, S. C. Discussion led by Dr. N. Thomas Ennett, Beaufort, N. C.

Symposium on Cardiology—Moderator, Dr. Wellford C. Reed, Richmond, Va.

Congenital Heart Lesions—Dr. J. A. Boone, Charleston, S. C.

The Management of Acute Myocardial Infarction—Dr. Julian R. Beckwith, Clifton Forge, Va. Discussion led by Dr. Robert McMillan, Bowman Gray School of Medicine, Winston-Salem, N. C., and Dr. Fred R. Klenner, Reidsville, N. C.

#### ACCUSATION AGAINST SMALL-HOSPITAL PHYSICIAN AND SURGEONS REFUTED

MORTALITY RATE LOWER FOR PEOPLE SERVED BY SMALL-HOSPITAL  
DOCTORS

IN THE PAST few weeks many newspapers have quoted Dr. Hamilton W. McKay, Charlotte urologist, as having said in his presidential address to the Southern Medical Association, that whatever support there is for the program for socializing medical practice will be largely dissipated if the American medical profession will "clean its own house." Then comes the statement: "I am referring to the medical man or surgeon—usually in the small hospital—who can not or will not make proper studies to arrive at a diagnosis or have a diagnosis made."

Since the papers agreed on this wording, in news and editorial columns, and no correction has been seen, we may take it for a fact that the president of the Southern Medical Association was correctly quoted.

Now, desirable as it is that a correct diagnosis be made, this is not the main desideratum. The great desire of the patient is to be got well, to be cured, "*cito, tuto et jucunde*" (quickly, safely and pleasantly) in the words of one of the great among the ancients in medicine. True, *adequate* diagnosis is essential to cure, but there is wide difference between *adequate* diagnosis and *complete*, widely touted as "scientific," diagnosis—extremely wide as to cost.

Adequacy of diagnosis is best demonstrated by success of treatment in curing disease and prolonging life.

*Southern Medicine & Surgery* has proclaimed for a dozen years that the death rate among our town and country folks is lower than among the residents of our cities. It is so from year to year, and in every State whose records the editor has looked into. And the records for town and country are not lower because their people go to the cities to die. A man who lives in Union county and dies in Charlotte goes down on the records as a Union county, not a Mecklenburg county, death.

As the sound thinker Al Smith used to say, let's look at the record. The record we will use is made up from the most recent reports by the Board of Health of North Carolina and several other states.

#### Number of Deaths per 1000 Population:

N. C.

Counties having Seven Largest Cities, average .....	8.7
Counties having Seven Smaller Cities and Towns, each having a hospital .....	7.25
(First seven on list beginning with Alamance)	

Georgia

By regions, mortality in County having main city in region, and in counties of each region outside its main city—

Northwest Region—

		Other Counties
Fulton Co. (Atlanta).....	9.8	9.0
East Central—		
Richmond Co. (Augusta).....	10.8	9.2
West Central—		
Bibb Co. (Macon) .....	9.8	9.4
Southeast—		
Chatham Co. (Savannah).....	10.1	9.2

Virginia

The cities of Virginia are entirely separate politically from the counties.

Mortality average for the 17 cities.....	11.14
Mortality for the rest of the State.....	7.8

Louisiana

All of us Southern doctors are interested in, and proud of, New Orleans medicine. There as in Virginia, the records for the cities are made up separately from those for the parishes.

Mortality Average for the Cities.....	10.9
(New Orleans .....	10.4)
Mortality Average for the Parishes.....	9.2

Massachusetts

Nowhere in the wide world is first-class diagnostic study and hospital care so readily available as in Boston.

Mortality for the City of Boston.....	13.0
---------------------------------------	------

Mortality for Massachusetts outside Boston .....	10.9
--	------

South Carolina	
Mortality for Population of Cities.....	11.2
Mortality for Population Outside Cities....	8.6

It may be accepted as fact that the ninety-and-nine, given their choice, would take the better chance of surviving in preference to the better chance of being elaborately diagnosed.

I hope that every doctor who does any of his work in, or sends patients to, a small-town hospital will have the editor of his local paper put these facts before his readers, in justice to small-town doctors, and for the peace of mind of those who seek their services.

The reasons for dissatisfaction with the present method of obtaining and paying for health care have been investigated in many cities by the simple method of stationing intelligent persons in department stores to question all who would allow themselves to be questioned. With astonishing unanimity the reports from these questionings have agreed on the chief complaint being about *cost*, and the chief items of cost complained of were excessive charges by specialists, and unnecessary sending to hospital and keeping in hospital for the convenience of the doctor, rather than for the good of the patient.

If patients in the small cities, in the towns, and out in the country have made such complaints, such complaints have not got into general circulation.

It occurred to me to show the mortality rate for each of the seven big-city counties of North Carolina, and along with it the rate for each small-city or no-city county adjoining.

Here they are:	
Buncombe (Asheville) .....	9.1
Haywood .....	6.2
Henderson .....	9.9
Madison .....	7.5
McDowell .....	6.0
Rutherford .....	6.5
Yancey .....	6.6
	42.7—Ave. 7.1

Durham (Durham) .....	8.5
Chatham .....	9.3
Granville .....	8.4
Orange .....	7.6
Person .....	6.1
	31.4—Ave. 7.85

Forsyth (Winston-Salem) .....	8.7
Davidson .....	7.0
Davie .....	8.2

Stokes .....	6.4
Yadkin .....	6.7
	28.3—Ave. 7.75
Guilford (Greensboro and High Point) .....	7.6
Alamance .....	6.4
Caswell .....	7.1
Davidson .....	7.0
Randolph .....	8.0
Rockingham .....	8.2
	36.7—Ave. 7.3

Mecklenburg (Charlotte) .....	8.5
Cabarrus .....	6.5
Gaston .....	6.5
Iredell .....	7.6
Lincoln .....	7.6
Union .....	8.1
	36.3—Ave. 7.26

New Hanover (Wilmington) .....	9.3
Brunswick .....	6.7
Pender .....	8.5
	15.2—Ave. 7.6

Wake (Raleigh) .....	8.6
Chatham .....	9.3
Franklin .....	8.6
Granville .....	8.4
Harnett .....	7.2
Johnston .....	7.5
Lee .....	7.7
	48.7—Ave. 8.1

And you are reminded, these figures are made out on what counties these persons' homes were in when they died, not on counties in which the deaths occurred.

THE FIRST X-RAY PICTURE MADE IN VIRGINIA?

The plate which illustrates the case described is from an x-ray photograph taken April 23d, 1897, by Dr. William H. Taylor, Professor of General Chemistry, Toxicology, and Medical Jurisprudence in the Medical College of Virginia. The negative was taken on a Carbutt x-ray plate by means of an induction coil capable of giving a 6-inch spark and operated by a storage battery, with the secondary wires connected direct to a so-called focus tube made by Queen & Co. The tube was set four and a half inches above the surface of the plate, which was wrapped in black paper. Chloroform was administered to the child, and its arm having been placed in position upon the plate an exposure of eight minutes was given. The negative was developed with pyrogallie acid and sodium carbonate, liberal quantities of each being used.

—Medical Register, May, 1897.

Some of those birds who drive like crazy with Roses in their arms are sure to end up with lilies in their hands.

A woman doesn't need to add if she can distract.

## NEWS

### BASE HOSPITAL 65 SURVIVORS PLEASE NOTE

Colonel William E. Butler died at his home in Brooklyn on May 31st, 1950. He received his medical degree from the Long Island College Hospital in 1890, and entered the Intern Class at The Brooklyn Hospital in the same year. Later, he took postgraduate work at Heidelberg University, Germany. Developing an interest in medical jurisprudence, he became a graduate of the Brooklyn Law School in 1908, obtaining degrees, also, from the New York University and the St. Lawrence University.

He was an organizer and former president of the Brooklyn Postgraduate Medical School, and had taught there at the Long Island College Hospital and at Dartmouth College.

In 1892 he joined the 23rd National Guard Regiment and rose to the rank of captain. He was a lieutenant in the New York Naval Militia and a Surgeon of the Second New York Naval Battalion. During World War I, he served at Camp Greenleaf, Georgia, and elsewhere, later being placed in command of a base hospital in France. He rose to the rank of Colonel in the Medical Auxiliary Reserve.

Colonel Butler was a founder of the American Legion and a charter member of the 40-and-8, an enthusiastic Mason, Knight Templar, Shriner, and secretary, at the time of his death, of the National Sojourners.

—*Brooklyn Hospital Journal.*

THE CARTERET COUNTY MEDICAL SOCIETY, at its regular monthly meeting on November 13th, was entertained at dinner by the Morehead City Hospital. Topics discussed were: The Control of Diabetes, The Examination of Nursery Milk Specimens, The Proposed Blood Bank, The Medical Historical Commission, and Voluntary Health Insurance.

The society decided December 11-16 as the most appropriate time for the family physicians to make the free urinalyses they had expressed willingness to do. It was decided that these examinations be in the physicians' office and not in the Health Department. This action of the society is another answer to the proponents of socialized medicine.

Specimens of milk and nipples used in the nursery of the Morehead City Hospital are being examined, bacteriologically, from time to time by the Carteret County Health Department Laboratory.

The Craven County and Carteret County proposed Blood Bank, sponsored by the American Red Cross, is still in the formative stage.

The president of the local society, Dr. S. W. Hatcher, appointed the following committee: Dr. B. F. Royal, Chair.; Dr. C. S. Maxwell, Dr. F. E. Hyde and Dr. N. Thomas Ennett, to cooperate with the Historical Commission of the State Medical Society.

One of our members, Dr. K. P. B. Bonner, is a charter member of the State Historical Commission.

The Blue Cross and Blue Shield Insurance Companies had representatives at the meeting for the purpose of explaining the important features of the contract to the physicians. These representatives claim that some 900,000 persons in North Carolina were covered by voluntary health and hospital insurance by these companies.

Dr. S. W. Hatcher, President, presided.

Reported by N. Thos. Ennett,  
Corresponding Secretary.

### MEDICAL COLLEGE OF SOUTH CAROLINA

The Medical College of South Carolina gave its Ninth Annual Founders' Day Program in Charleston, South Carolina, on November 2nd. The program was under the joint sponsorship of the Medical College Alumni Association and the South Carolina Academy of General Practice. Included among the speakers were teachers and clinicians from a number of leading medical schools in the South and other parts of the country.

SIXTH (N. C.) DISTRICT MEDICAL SOCIETY.—The Sixth District Medical Society met at State Hospital, Butner, North Carolina, on Wednesday afternoon and evening, October 18th. Speakers at the afternoon session were Dr. Everett I. Bugg, Jr., Durham, and Dr. Sam Carrington, Oxford. The evening program consisted of a panel discussion on "Uses and Abuses of Antibiotics," with the following doctors taking part: Dr. Samuel P. Martin, moderator; Dr. Kemp Jones, Dr. George Crane, Dr. Deryl Hart, Dr. Jay Arena and Dr. James Woods.

Officers of the society are: Dr. Rives W. Taylor, Oxford, president; Dr. H. H. Bass, Henderson, vice-president; Dr. R. L. Noblin, Oxford, secretary-treasurer; Dr. Arthur H. London, Durham, counselor.

NINTH DISTRICT (N. C.) MEDICAL SOCIETY.—Dr. Jacob H. Shuford, Hickory, was elected president, and Dr. John S. Lewis, Hickory, secretary-treasurer of the Ninth District Medical Society at its annual meeting in September.

A recent Bulletin of the Medical and Chirurgical Faculty of the State of Maryland contains this paragraph:

"All county societies and the City Medical Society are component societies of the Medical and Chirurgical Faculty of the State of Maryland. Each component society shall judge the qualifications of its own members, but as such societies are the only portals to the State Society and the American Medical Association, every reputable and legally registered physician who does not practice or claim to practice or lend his support to any exclusive system of medicine, shall be eligible for membership."

DR. PAUL F. WHITAKER, of Kinston, was elected on September 19th to fill the unexpired term of Dr. Paul G. Parker on the North Carolina State Board of Medical Examiners.

DR. GEORGE L. CARRINGTON, Burlington, has announced the association of Dr. James B. Martin in the practice of general surgery at the Alamance General Hospital.

WILLIAM T. RABY, M.D., announces the opening of new offices for the practice of Internal Medicine, 101 Queens Road, Charlotte.

### DIED

Dr. Stuart N. Michaux, Richmond, 72, died November 11th, following an attack suffered the previous day while at his summer home on the Rappahannock. He was vice-president of the board of directors of Stuart Circle Hospital, and since 1945, emeritus professor of gynecology at the Medical College of Virginia. Dr. Michaux was graduated from the Medical College of Virginia in 1903 and was a member of the faculty from 1913 to 1945. He was a member of many medical organizations including the Tri-State Medical Association, and the South Atlantic Association of Obstetricians and Gynecologists of which he was a charter member.

Dr. Thomas Flatford Gill, Richmond, 70, died November 2nd. He was graduated from Medical College of Vir-



ginia in 1908. He practiced for 12 years in Fauquier County before locating in Richmond in 1920.

Dr. Delbert Lee LeKites, 70, for 23 years a resident of Chincoteague, was killed on the night of November 2nd in an automobile accident. He was a graduate of the University of Louisville in 1909. On November 3d a meeting was to be held at which Dr. LeKites would have been proclaimed the man-of-the-year of his county of Accomac, Virginia. Among the medical organizations in which Dr. LeKites held membership was the Tri-State Medical Association.

Dr. Emil Parks Amiss, 78, retired physician of Martinsville, Va., died November 3rd in a convalescent home at Harrisonburg.

Dr. Paul Godwin Parker, Erwin, N. C., Medical College of Va. 1916, died September 19th, aged 57, of coronary occlusion. Dr. Parker was a member of the board of medical examiners of the State of N. C.; past president of the Harnett County Medical Society; president of the county board of health. He served in the Armed Forces during World War I and was a member of the staff of Good Hope Hospital, Erwin.

LISPETH

A student was reciting, telling about the inner and outer bark and the pith of the small tree called elder. Noting inattention on the part of a co-ed, he asked her, "Miss Robinson, do you know what pith is"; and got the demure reply, "Yethir."

It had been several weeks since a prosperous farmer had been in the bank where a woman in her early 30's worked. "Miss Lee," he greeted her, "you seem to getting a little stouter." "Don't you know you musn't ever tell a woman she is getting fat?" he chided. "Oh," he said with surprise, "I didn't think a woman your age would mind."

Sign on a Michigan farm: "Attention Hunters—Don't Shoot Anything on My Place That Isn't Moving. It May Be My Hired Man!"

An undertaker found a donkey lying dead in front of his premises, and went to inform the police. "What'll I do with it?" he asked the officer in charge. "Do with it? Bury it, of course," said the officer, laughing. "You're an undertaker, aren't you?" The undertaker looked him straight in the eye. "Certainly I am," he replied, "but I thought it only right to come around and inform the relatives first."

A fluttry young thing was being interviewed for a bookkeeping job at a swank night club. "You understand," said the personnel man, "that we need a responsible person." "I'm very responsible," she assured him. "Why, on my last job, whenever there was something called a discrepancy, they always said I was responsible."

The Centipede was happy quite  
Until the toad in fun,  
Inquired which came in front of which,  
Which raised his mind to such a pitch  
He lay distracted in the ditch,  
Considering how to run.

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## BOOKS

**ANXIETY**, Edited by PAUL H. HOCH, M.D., New York State Psychiatric Institute; College of Physicians and Surgeons, Columbia University; and JOSEPH ZUBIN, Ph.D., New York State Psychiatric Institute; Department of Psychology, Columbia University, New York City.

The Proceedings of the 39th Annual Meeting of the American Psychopathological Association, held in New York City, June, 1949. Grune & Stratton, Inc., 331 Fourth Ave., New York 16, N. Y. 1950. \$4.50.

The foreword tells us that although it is widely recognized that anxiety is the most pervasive psychological phenomenon of our time and that it is the chief symptom in the neuroses and in the functional psychoses, there has been little or no agreement on its definition, and very little, if any, progress in its measurement.

Well, in none of the reviewer's many pronouncements on the use of meaningless words by the psychiatrists has there appeared so devastating a statement on the subject as that. The editors do not attempt to cover all the types of anxiety, "since it is not possible to describe all the manifestations of anxiety." But they venture to hope that the contributions in this volume will focus attention on the great importance of anxiety in our culture and as a cause of symptoms in most emotional disorders.

This reviewer promises to learn all he can from this book about anxiety; and he urges all the readers to do the same. The humility of the foreword has great appeal.

**INDICATIONS FOR AND RESULTS OF SPLENECTOMY**, by FREDERICK A. COLLIER, M.D., ALEXANDER BLAIN, III, M.D., and GOULE ANDREWS, M.D. From the Department of Surgery and Medicine, University of Michigan Medical School, Ann Arbor. Charles C. Thomas, 301-327 E. Lawrence Ave., Springfield, Ill. 1950. \$2.25.

All the patients who have had an elective splenectomy in the University of Michigan Hospital in the past fifteen years have been studied and their physical status evaluated. The selection of cases for this operation has been largely made by the professor of medicine and his associates.

It is concluded that splenectomy offers a specific cure for thrombocytopenic purpura, congenital (and some cases of acquired) hemolytic anemia, and some cases of Banti's syndrome; and that it is worthwhile in Gaucher's disease, splenic cysts and splenic infarction. It produced a cure in one of the two cases of hypoplastic anemia, and benefit was had from it in a number of other states of which splenomegaly was a feature.

**AMIALE AUTOCRAT: A Biography of Dr. Oliver Wendell Holmes**, by ELEANOR M. TILTON. Henry Schuman, Inc., 20 East 70th St., New York City 21, N. Y. 1947. \$5.00.

Oliver Wendell Holmes was great as a scholar, as a poet, as a writer of prose, as a physician and as a medical teacher. Probably no other holder of the degree of Doctor of Medicine was really first-class in so many fields.

At any time in the last 100 years it was needful that doctors know Oliver Wendell Holmes. Now, when the average attainer of the doctorate in Medicine does not have the general education, including education in his mother tongue, that was required for graduation from a high school in Holmes' time, there is a crying need that doctors learn more about their forefathers in the profession who were really educated, and thus gain, in Osler's words, "If not the education of a scholar, at least that of a gentleman."

**CLINICAL APPLICATIONS OF SUGGESTION AND HYPNOSIS**, by WILLIAM T. HERON, M.A., Ph.D., Professor of Psychology, University of Minnesota. Charles C. Thomas, 301-327 E. Lawrence Ave., Springfield, Ill. 1950. \$3.00.

The book is written for professional use only, not for general circulation. The author, not an M. D., is professor of Psychology in one of our great universities. The examples he cites of the power of suggestion, for good or for evil, are trite. What he says about hypnosis will appeal to many. This reviewer has been interested in the subject since his boyhood, but he has never found any evidence of

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ORIN R. YOST, M.D.

## EDGEWOOD

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SOUTH CAROLINA

the value of the procedure and he is convinced that whatever little good it is capable of is greatly counterbalanced by the evil.

SIR WILLIAM OSLER: APHORISMS FROM HIS BEDSIDE TEACHINGS AND WRITINGS, collected by ROBERT BENNETT BEAN, M.D. (1874-1944), edited by WILLIAM BENNETT BEAN, M.D. *Henry Schuman, Inc.*, 20 East 70th St., New York City 21, N. Y. \$2.50.

These aphorisms cover the whole field of medicine in its widest sense, which is to say practically the whole of the essentials of life, and most of its luxuries. If you will not read and reread his two volumes of essays and addresses, go at least so far along this cultural road as to read this little book of aphorisms.

PARKINSON'S DISEASE, by WALTER BUCHLER, 101 Leaside Crescent, London, N. W. 11, England, 1950. \$2.00.

This little book is written by one not a physician but a sufferer from the disease. It is a good exercise in English and it will be helpful reading to others so afflicted.

THE PHYSICIAN EXAMINES THE BIBLE, by C. RAIMER SMITH, B.S., M.D., D.N.B. Philosophical Library, 15 East 40th St., New York 16, N. Y. 1950. \$4.25.

The author undertakes to show that the Bible is a book for all times. He says there has been no book published recently that examines the Bible from a medical standpoint. Chapter heads are:

Medical subjects in the Old Testament; medical notes on the Apocrypha, alcoholic liquors in the Bible, faith cure of disease, New Testament medical references, the Scriptures in the atomic age, the temple of the body, and summary and prognosis.

It is stated that the author wanted to be able to answer the questions of youth in regard to the Bible and its relation to science, not in general terms but in detail.

CANCER OF THE COLONIC AND RECTUM: Its Diagnosis and Treatment. Second edition, by FRED W. RANKIN, B.A., M.D., LL.D., Sc.D., F.A.C.S., Clinical Professor of Surgery, University of Louisville, Ky.; and A. STEPHENS GRAHAM, M.D., M.S. (in Surgery, F.A.C.S., Associate Professor of Surgery, Medical College of Virginia. *Charles C. Thomas*, 301-327 E. Lawrence Ave., Springfield, Ill. 1950. \$7.50.

This edition duly records progress that has been made in this field since the first edition was printed more than a decade ago. It may be taken as an authoritative presentation of the whole subject written in an engaging manner and in exceptionally readable type. The illustrations as well done and serve the purpose of supplementing the text admirably. That Dr. A. Stephens Graham belongs to us all of you know. Many may not know that Dr. Fred W. Rankin was born within 50 miles of Charlotte, a member of a family which includes in its distinguished members Dr. Watson Smith Rankin.



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